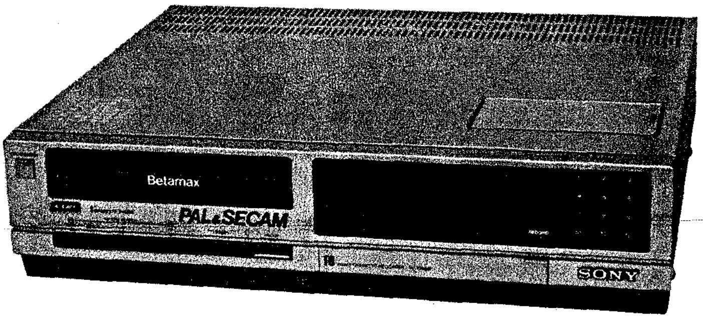
SL-T20ME

9001

RMT-216

SERVICE MANUAL



711B CHASSIS

October, 1983

This manual contains the adjustment manual.

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning
Video signal	CCIR standards, PAL and SECAM colour
Aerial input	75-ohm, asymmetrical aerial socket
Channel coverage	VHF: Western European channels E2-12 UHF: Western European channels E21-68 (Up to 12 programmes can be preset.)
RF output signal	UHF channels E30 to E39 (variable) 75 ohms, unbalanced

Video

Input	VIDEO IN: BNC connector $1.0\ \mathrm{V}\ ^{+1.0}_{-0.5}\ \mathrm{V}$ (p-p) 75 ohms, unbalanced, sync negative
Output	VIDEO OUT: BNC connector 1.0 V (p-p) ±0.1 V (p-p) 75 ohms, unbalanced, sync negative
Horizontal resolution	260 lines
Signal-to-noise ratio	Colour: Better than 40 dB B/W: Better than 43 dB

Audio

Input	AUDIO IN: phono jack 47 kilohms, −10 dBs (0 dBs = 0.775 V rms)
Output	AUDIO OUT: phono jack Load impedance less than 10 kilohms −10 dBs with 47 kilohms load, unbalanced
Frequency response	50 Hz to 10 kHz
Signal-to-noise ratio	40 dB
Audio distortion	Less than 4% at 400 Hz

Tape transport

Tape speed	18.73 mm/sec.
Maximum recording time	2 hours 10 min. (with Sony L-500 cassette) 3 hours 15 min. (with L-750)
Fast forward/rewind time	Within 5 min. (with L-500)

Timer

Clock	Crystal lock
Time indication	24-hour cycle
Timer setting	Only for recording 2 events/week, adjustable for any day or for all 7 days of the week
Power back-up	Back-up duration of 3 minutes minimum at one time

General

Power requirements	110–240 V ac ±10%, 50/60 Hz
Power consumption	30 W
Storage temperature	−20°C to +65°C (−4°F to +149°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	Approx. 430 × 105 × 360 mm (w/h/d) (17 × 4¼ × 14¼ inches) including projecting parts and controls
Weight	Approx. 9 kg (19 lbs 13 oz) net

— Continued on next page —

Beta

β VIDEO CASSETTE RECORDER

SONY®

MICROFILM

Consumer
VIDEO

Accessories supplied

75-ohm coaxial cable for recorder to TV connection	1
Remote Commander RMT-216 with two IEC designation R6 batteries	1
RF channel adjustment tool	1
Demonstration cassette	1

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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ADJUSTMENT MANUAL

SECTION 1
GENERAL

1-1. PRECAUTIONS

On safety

- This unit operates on 110–240 V ac, 50/60 Hz. No voltage adjustment is required.

- Should any solid object or liquid fall into the cabinet, turn off the unit and have it checked by qualified personnel before operating it any further.
- To disconnect the mains lead (ac power cord), pull it out by the plug. Never pull the lead itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation grille.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The unit is designed for operation in a horizontal position. Do not install it in an inclined position.
- Keep the unit and cassette tapes away from equipment with strong magnets, such as a microwave oven, large loudspeakers, etc.
- Do not install the unit near an AM receiver, since a noise may be heard when listening to the AM programme.

On operation

- When the unit is not to be used for a long period, turn the power off to conserve energy and to extend the useful life of your unit.
- Remove and store video cassettes after recording or playback.
- This unit should not be operated for two hours after being transported from a cold to a hot environment to avoid condensation from forming on the head drum. Condensation can cause the tape to stick to the head drum, resulting in damage to the tape.

On cleaning

Clean the cabinet, panel and controls with a dry soft cloth. Do not use a moistened cloth or any type of solvent, such as alcohol or benzine, which might damage the finish.

On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

This unit is designed to receive, record and play back programmes based on the PAL and SECAM colour systems.
- Tapes recorded with the French SECAM colour system can be played back on this unit but it is not possible to receive French TV broadcasts with this unit.

If you have any questions about this unit, contact your Sony dealer.

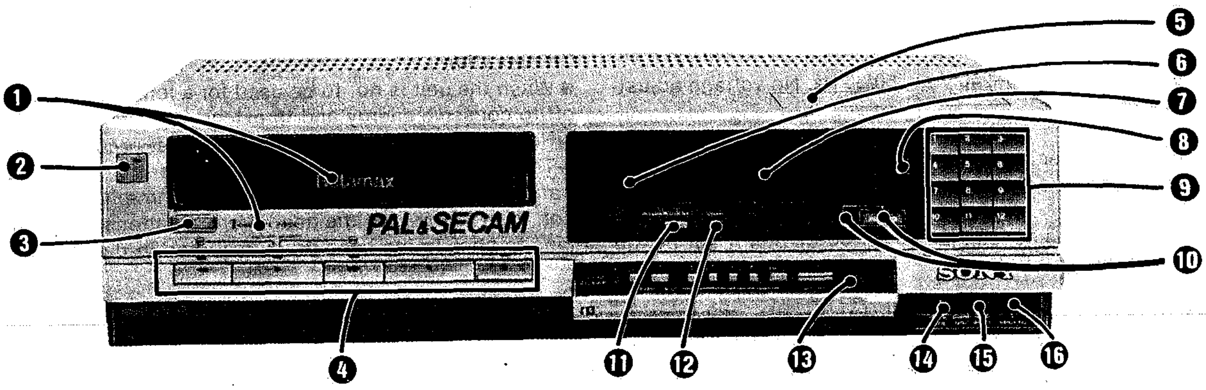
SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

1-2. LOCATION AND FUNCTION OF CONTROLS

Front



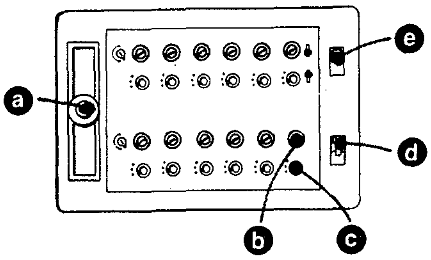
❶ Cassette compartment and CASSETTE INSIDE lamp
Insert a cassette after turning on the recorder. The lamp lights up when a cassette is inside.

❷ ON/STANDBY button and lamp
Press to turn on the unit. The lamp will light up. Press again to turn it off.
The timer section will continue to operate and the time will be displayed even if the ON/STANDBY button is off so long as the ac power cord is connected to the wall outlet.

❸ EJECT button
Press to remove the cassette. This button does not function when the recorder is turned off.

❹ Function buttons
▶ PLAY button : Press to play the tape back.
◀◀ REW button : Press to rewind the tape. Also used for the reverse picture search and skip scan operation.
▶▶ FF button : Press to advance the tape rapidly. Also used for the forward picture search and skip scan operation.
■ STOP button : Press to stop the tape.
❚❚ PAUSE button : Press to stop the tape for a moment during recording or playback. A still picture will be seen during playback. Press again to release the pause mode.

❺ Tuning compartment



ⓐ Tuning aid : Use to select the band and to turn the tuning control. The indication at its end shows the approximate position within the selected band.

ⓑ Tuning control : With the supplied tuning aid, turn until the desired station is properly tuned in.

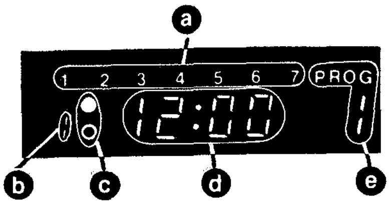
ⓒ Band-select switch : Using the supplied tuning aid, set to V_L (channels E2 through E4), V_H (channels E5 through E12), or U (channels E21 through E68) according to the channel to be tuned in.

ⓓ AFT switch : When the tuning compartment is closed, the automatic fine tuning circuit locks in the signal and maintains a sharp picture.

ⓔ TEST SIGNAL switch : Set to ON to obtain a test pattern.

❻ REMOTE SENSOR
Detects the remote control signal transmitted from the supplied Remote Commander.

❼ Display window



ⓐ Day of the week indication : Shows the day of the week on which the timer-activated recording will take place.

ⓑ Event number

ⓒ Turn-on and turn-off setting indications : The "●" mark shows you are setting the turn-on time and the "O" mark shows the turn-off time.

ⓓ Time and counter display : Usually shows the present time. When the TIMER/COUNTER button is pressed to COUNTER, the display shows the counter number.

ⓔ Programme number : Shows the programme number selected with the programme select buttons.
When the INPUT SELECT switch is set to LINE to record signals from the VIDEO IN and AUDIO IN jacks, the indication will change to "AU".

⑧ TIMER REC lamp
Lights when the TIMER REC button behind the front panel is pressed to set the recorder in the stand-by mode. It remains lit till the timer recording is finished.

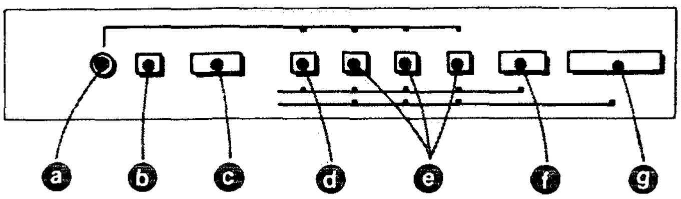
⑨ Programme select buttons
Select the number of the programme to be recorded or to be viewed. The selected programme number will appear in the display window.

⑩ RECORD button and lamp
Press to start recording. The lamp will light up.

⑪ TIMER/COUNTER button
Press to set the display to the tape counter. To reset to clock, press it again.

⑫ COUNTER RESET button
Press to set the tape counter reading to "0000".

⑬ Timer setting section (behind the front panel)



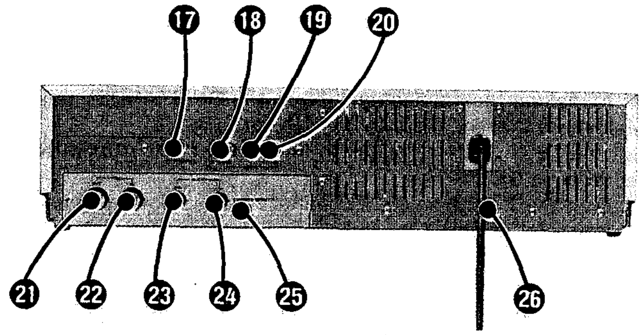
- ⓐ **CLOCK SET button:** Press to set the clock.
- ⓑ **CLEAR button:** Press to clear the timer programme memorized.
- ⓒ **TIMER SET button:** Press to set the turn-on/off time of a recording.
- ⓓ **DAY button:** Press to set the turn-on day of a recording.
- ⓔ **HOUR, 10 MIN and MIN buttons:** Press to set the turn-on/off time of a recording.
- ⓕ **PROG button:** Press to select the TV programme to be recorded by the timer.
- ⓖ **TIMER REC button:** Press to set the recorder in the timer recording stand-by mode.

⑭ TONE select switch
Normally set to the H position. Set to L if the sound seems to exaggerate high frequencies during the playback of a tape recorded on another recorder.

⑮ INPUT SELECT switch
Select the programme to be recorded.
LINE: for recording signals connected to the VIDEO IN and AUDIO IN jacks
TUNER: for recording TV programmes

⑯ TRACKING control
If streaks or snow appears during the playback of a tape recorded on another recorder, turn this knob to obtain the best possible picture.

Rear



⑰ RF CHANNEL screw
If there is interference on the factory preset channel for RF output and the signal of this recorder unit cannot be displayed clearly on the TV screen, adjust this screw with the supplied screwdriver.

⑱ AERIAL OUT socket
Connect the aerial input of the TV receiver using the supplied cable.

⑲ DX/LOCAL switch
Normally set this switch to DX. If the TV signal is very strong, set the switch to LOCAL.

⑳ AERIAL IN socket
Connect the aerial cable.

㉑ VIDEO OUT jack (BNC type)
Connect to the video input of another video cassette recorder or a video monitor.

㉒ VIDEO IN jack (BNC type)
Connect to the video output of a camera, another video cassette recorder, etc.

㉓ AUDIO OUT jack (phono type)
Connect to the audio input of a video monitor or a video cassette recorder.

㉔ AUDIO IN jack (phono type)
Connect to the audio output of a camera or another video cassette recorder.

㉕ CAMERA REMOTE jack (special mini jack)
For camera recording, connect an ac adaptor to this jack.

㉖ AC mains lead

1-3. ADJUSTING THE TV

One of the television channels must be adjusted to receive the signal from the recorder.

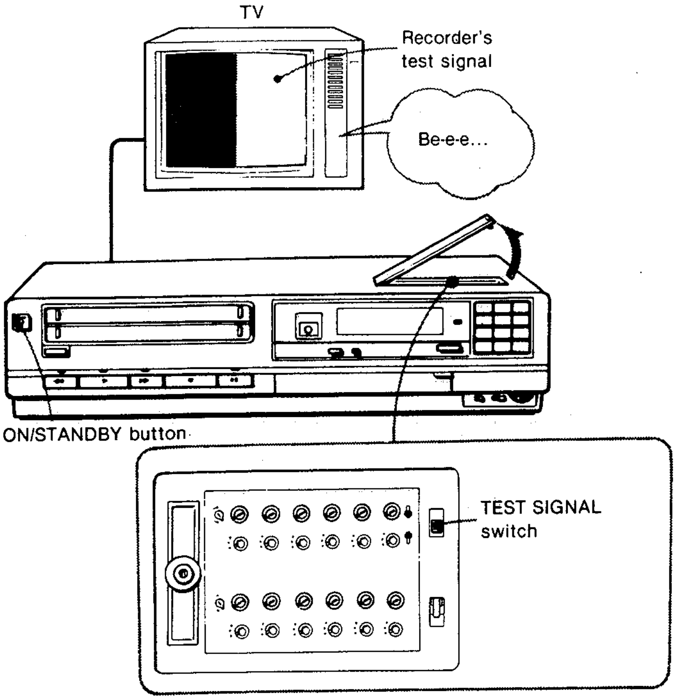
1 After making the connections, press the ON/STANDBY button.
2 Make sure that the recorder is in the stop mode.
3 Set the TEST SIGNAL switch in the tuning compartment of the recorder to ON.
4 Turn on the TV and select a channel which is not being used to receive a TV station. Tune the channel until you see a clear black and white pattern on the TV screen and you hear a continuous tone. This is the recorder's test signal.

- Note that the test signal is transmitted on a channel between UHF channels 30 and 39.

If the test picture is free of disturbance, the TV adjustment is complete. Set the TEST SIGNAL switch to OFF.
If the test picture is not free of disturbance, proceed with the next adjustment.

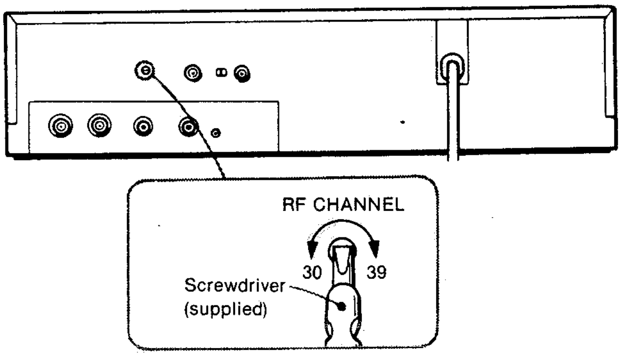
> Whenever you use the video recorder, you should set the TV to the channel selected in this adjustment.

—If you are not sure how to adjust your TV, please refer to the TV's instruction manual or consult your dealer.



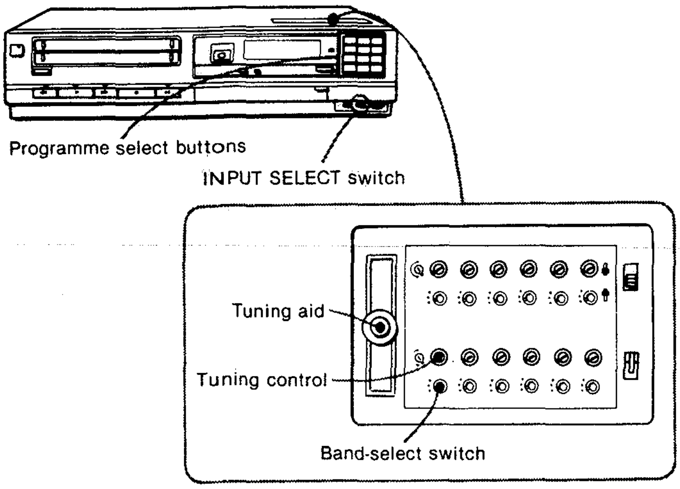
If the test picture is not free of disturbance

1 Reset the TEST SIGNAL switch to OFF.
2 Adjust the channel of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
3 Set the TEST SIGNAL switch to ON again.
4 Slowly turn the RF CHANNEL screw on the back of the recorder with the supplied screwdriver, until you see an undistorted test picture on the TV screen.
5 Now the TV adjustment is complete. Reset the TEST SIGNAL switch to OFF.



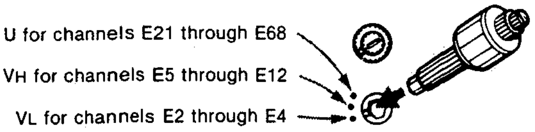
1-4. TV STATION PRESETTING

Once you have tuned your TV to the recorder, the next step is to tune the recorder to all the TV stations that you can receive in your area. Up to 12 TV stations can be preset in any order.

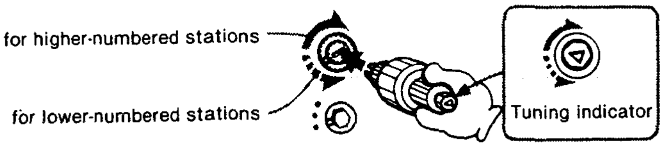

Programme select buttons
INPUT SELECT switch
Tuning aid
Tuning control
Band-select switch

PRESETTING PROCEDURE

1 Set the INPUT SELECT switch to TUNER.
2 Press the programme-select button to be preset.
3 Open the tuning compartment and, using the supplied tuning aid, set the band-select switch corresponding to the selected programme number to one of the three positions :


U for channels E21 through E68
VH for channels E5 through E12
VL for channels E2 through E4

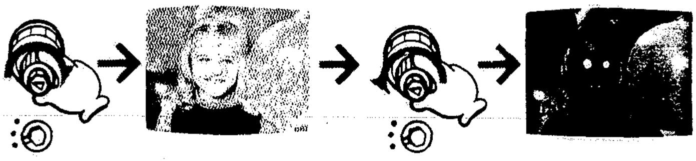
4 Using the other side of the tuning aid, turn the tuning control until the desired station is properly tuned in.
The indicator on the top of the tuning aid shows the approximate position in the selected band.


for higher-numbered stations
for lower-numbered stations
Tuning indicator

If you keep turning the tuning control clockwise, you will again get to the lowest-numbered station within that band.

When the picture appears, slowly turn the tuning control to the right until a herringbone pattern appears in the coloured part of the picture, then turn the control back until the picture is perfectly clear.

To identify the stations, consult a newspaper or TV programme guide.



5 Repeat steps 2, 3 and 4 for all the other stations.
6 Close the tuning compartment.
AFT (automatic fine tuning) circuit then locks in the signal and maintains a sharp picture.

After presetting the TV stations, you can use the programme select buttons of the recorder to tune in a station for viewing as well as recording.

1-5. CLOCK SETTING

When you connect the mains lead to a wall outlet, the clock indicates "0 : 00" with the two dots blinking.

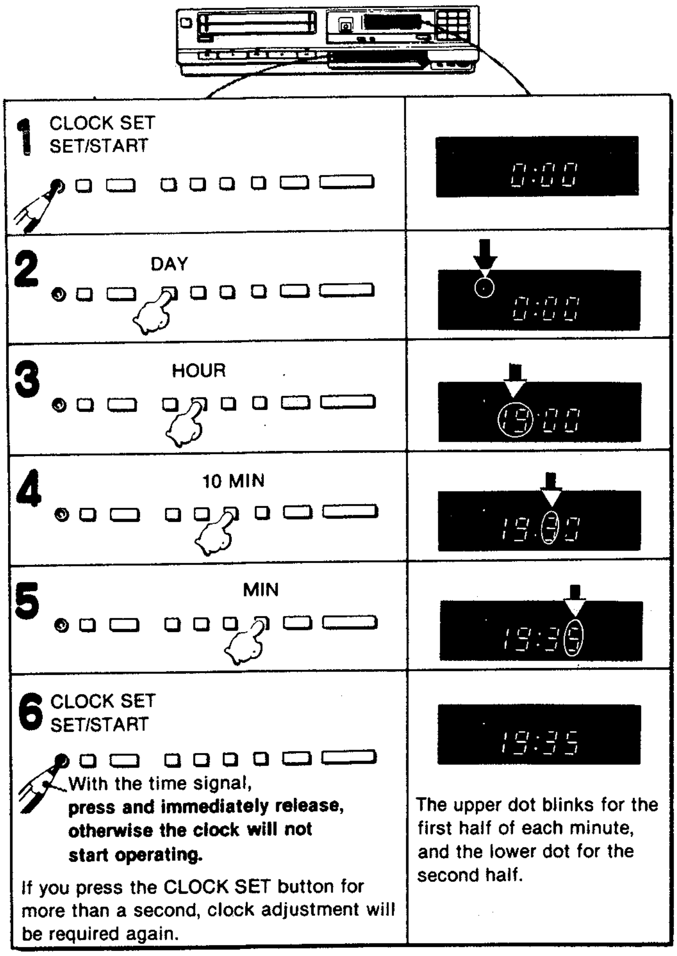
Example : To set the clock to 7 : 35 p.m. (19 : 35) on Tuesday*

*** Time indication**

AM				PM					
12:00 (midnight)	1:00		11:00	12:00 (noon)	1:00	2:00		10:00	11:00
↓ 0:00	↓ 1:00	•••••	↓ 11:00	↓ 12:00	↓ 13:00	↓ 14:00	•••••	↓ 22:00	↓ 23:00

Day indication

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
↓ 1	↓ 2	↓ 3	↓ 4	↓ 5	↓ 6	↓ 7



With the time signal, **press and immediately release, otherwise the clock will not start operating.**

If you press the CLOCK SET button for more than a second, clock adjustment will be required again.

The upper dot blinks for the first half of each minute, and the lower dot for the second half.

Zero second adjustment
Press the CLOCK SET button quickly (less than a second).
While the upper dot is blinking, the clock is set to the time displayed 00 second. For example, if the clock time is 7 : 30, 20 seconds, it is set to 7 : 30, 00 second.
While the lower dot is blinking, the clock advances one minute and is set to the time displayed 00 second. For example, if the clock time is 7 : 30, 40 seconds, it is set to 7 : 31, 00 second.

If you press the CLOCK SET button for more than a second, "0 : 00" blinks to show that the clock adjustment is required again.

When power has been interrupted for more than 3 minutes, the time indication "0 : 00" blinks, showing that the clock must be reset.
If power has been interrupted for less than 3 minutes, the displayed time remains correct.

The DAY, HOUR, 10 MIN and MIN buttons can be pressed in two ways :

When you hold a button down, the digits will advance continuously until the button is released.

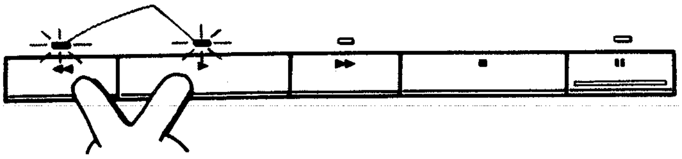
When you press and immediately release a button, the digits will advance by one.

1-6. AUTO PLAY

To playback from the beginning of the tape after rewinding

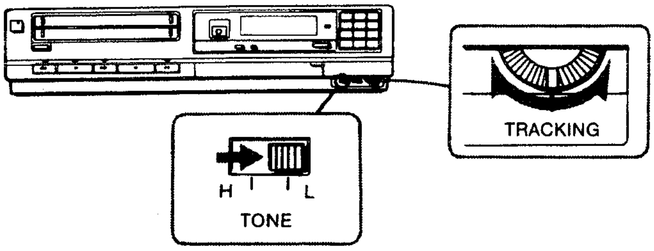
Press the ▶ PLAY button and ◀◀ REW button simultaneously in the stop mode. The lamps above these buttons blink alternately during rewinding.
After the tape is completely rewound, it will be automatically played back.

The two lamps blink alternately.



When playing back a tape recorded on another machine

If streaks or snow appears, adjust the TRACKING control for the best possible picture.
Return the control to the centre position after playing back the tape.

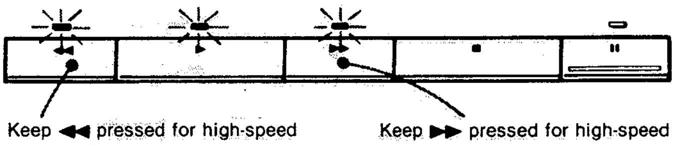


If the playback sound seems to have exaggerated high frequencies, set the TONE selector to L. Return the selector to the normal H position after playing back the tape.

1-7. TO SEARCH FOR A PARTICULAR SCENE

Picture search Viewing the picture at fast speed to find a particular scene

During playback



Keep ◀◀ pressed for high-speed reverse picture.

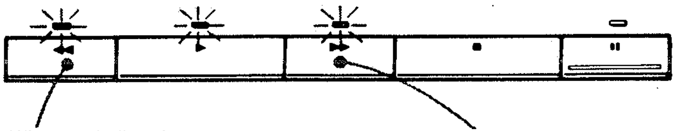
Keep ▶▶ pressed for high-speed forward picture.

Release the button at the desired point.
Normal playback will resume.

The picture search mode can also be started directly from the pause mode.

Skip Scan Viewing the picture momentarily during fast-forward or rewind

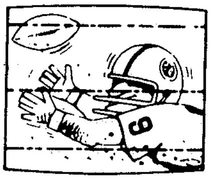
During rewind or fast forward mode



When rewinding the tape, keep ◀◀ pressed for high-speed reverse picture.

When rapidly advancing the tape, keep ▶▶ pressed for high-speed forward picture.

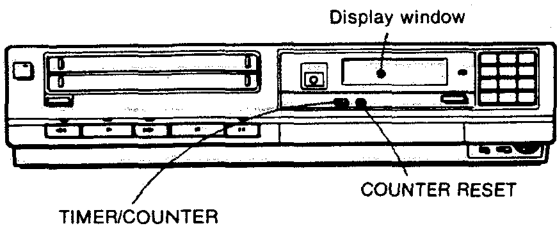
Release the button at the desired point.
The normal rewind or fast forward mode will resume.



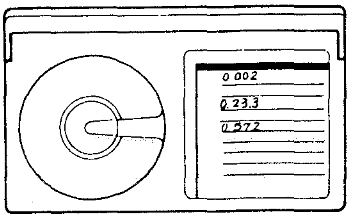
Streaks will appear during the picture search, the skip scan and the pause modes.

1-8. USE OF THE TAPE COUNTER

Turn on the power and press the TIMER/COUNTER button to display the counter reading in the display window.
To return the display to the present time, press the TIMER/COUNTER button again.



Before starting recording or playback, press the COUNTER RESET button to set the counter to "0000".
By noting the counter reading at the desired point, you can easily find that point later by referring to the counter.



Write the counter readings you want to remember on the label of the cassette.

Normal rewinding will stop at the tape counter's "0000" position.
To rewind the tape further, press the ◀◀ button again.
With automatic rewinding from the tape end or for "auto play", the tape will not stop at the counter's "0000" position.

Notes

- The counter reading is automatically reset to zero when a cassette is newly inserted.
- While the power is off, the display shows the present time, regardless of the TIMER/COUNTER setting.
- The counter reading will be retained in the memory even after the power is turned off, as long as the cassette is in the cassette compartment.
- The tape counter does not operate when a blank, unrecorded tape is played.

1-9. TIMER-ACTIVATED RECORDING

You can make one or two recordings within 7 days even when you are not at home. These recordings are identified as event 1 or event 2.

Check before setting the timer

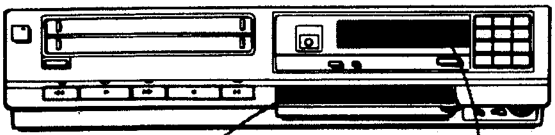
- Is the clock set to the correct day and correct time?

Timer setting can only be made after the clock has been set.

- Is a cassette inserted in the recorder?
- Is the cassette long enough to record the programmes?
- Does the cassette have a safety tab on the bottom?
- Is the INPUT SELECT switch set to TUNER?

Note: The timer cannot be set during recording, playback, or when the INPUT SELECT switch is set to LINE (The "AU" appears on the display window.).

Example: To record a PROG 2 broadcast from 9:00 AM to 11:25 AM on Friday for event 1.

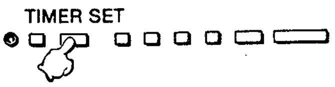


Button to be pressed.

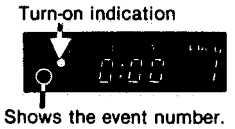
Time display

The segment to be set will blink.

1



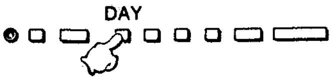
If the recorder is off, it will be turned on automatically.

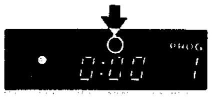

Turn-on indication
0:00
1

Shows the event number.

Event 1 will always appear first.

2 Select the turn-on day.

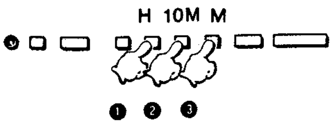


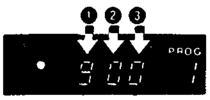


Indication changes as follows :

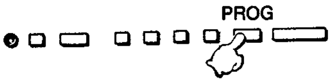
1234567 (everyday) → 1 (Monday) → 2 (Tuesday)... → 7 (Sunday)

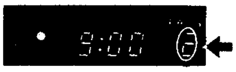
3 Set the turn-on time.



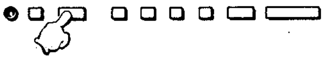

❶ ❷ ❸
PROG
9:00
1

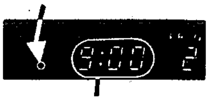
4 Select the programme to be recorded.





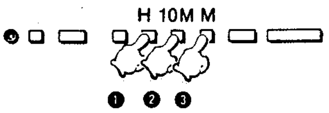
5

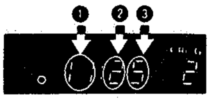



Turn-off indication
9:00
2

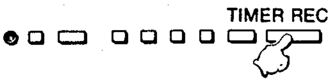
Blinks.

6 Set the turn-off time.



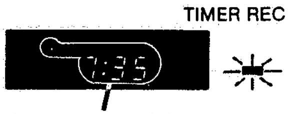


7



TIMER REC lamp lights up and the power is turned off.
At the preset turn-on time, recording will start automatically and will stop at the preset turn-off time.

If the inserted cassette is at its end or does not have the safety tab, the cassette will be automatically ejected.


TIMER REC
7:35

Present day and time

ONCE THE TIMER REC LAMP HAS LIT UP, NO FUNCTION OF THE RECORDER CAN BE ACTIVATED, except for checking the timer setting.
To operate the recorder after setting the timer for recording, press the TIMER REC button so that the TIMER REC lamp goes off. To reactivate the timer recording standby mode, be sure to press the TIMER REC button again.

To record to the end of the tape

Set the turn-off time to a time after the tape will reach its end.

If the tape reaches the end during the timer recording

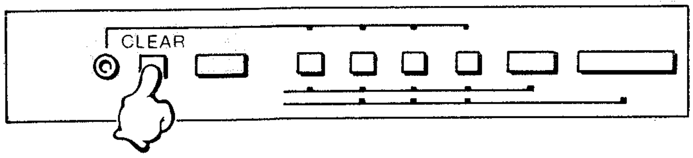
The recording will stop and the tape will be rewound to the beginning. Then after about a second, the recorder will be turned off.

To stop the on-going timer recording

Press the TIMER REC button so that the TIMER REC lamp goes off. The unit will be turned off automatically after about a second.

To erase the setting of an event

1. Press the TIMER SET button to display the event to be erased.
2. Press the CLEAR button. This event will be erased from the memory.



When a power interruption occurs before or during timer recording

If the clock shows "0 : 00" and the dots blink
All the timer settings have been erased. Reset the clock time and the timer settings.

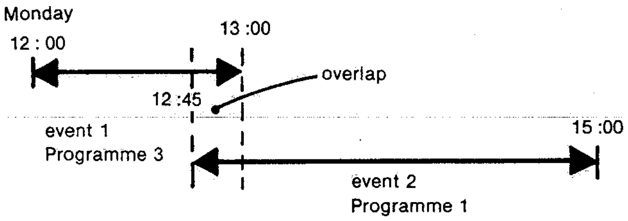
If the clock still shows the correct time but the dots blink
The power has been interrupted for less than 3 minutes.
The timer programmes are retained in the memory and the on-going timer recording will resume when the power is resupplied.
To stop the blinking, press any button in the timer-setting compartment.

ERROR INDICATIONS

If the ● and ○ indications as well as the event numbers blink when the TIMER REC button is pressed...
It means that the setting of these events overlap. Check the settings and eliminate the overlap.

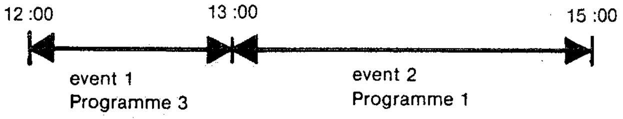
Example :

Timer setting



Even with this error indication, recording can be made.
In this case, the first preset recording continues to its turn-off point and then the next recording begins.

Realized recording



If the turn-on time of the 2 events is the same, recording of event 1 will be made.

TO CHECK THE TIMER SETTING

Press the TIMER SET button. Each time you press the button, the indication will change as follows :

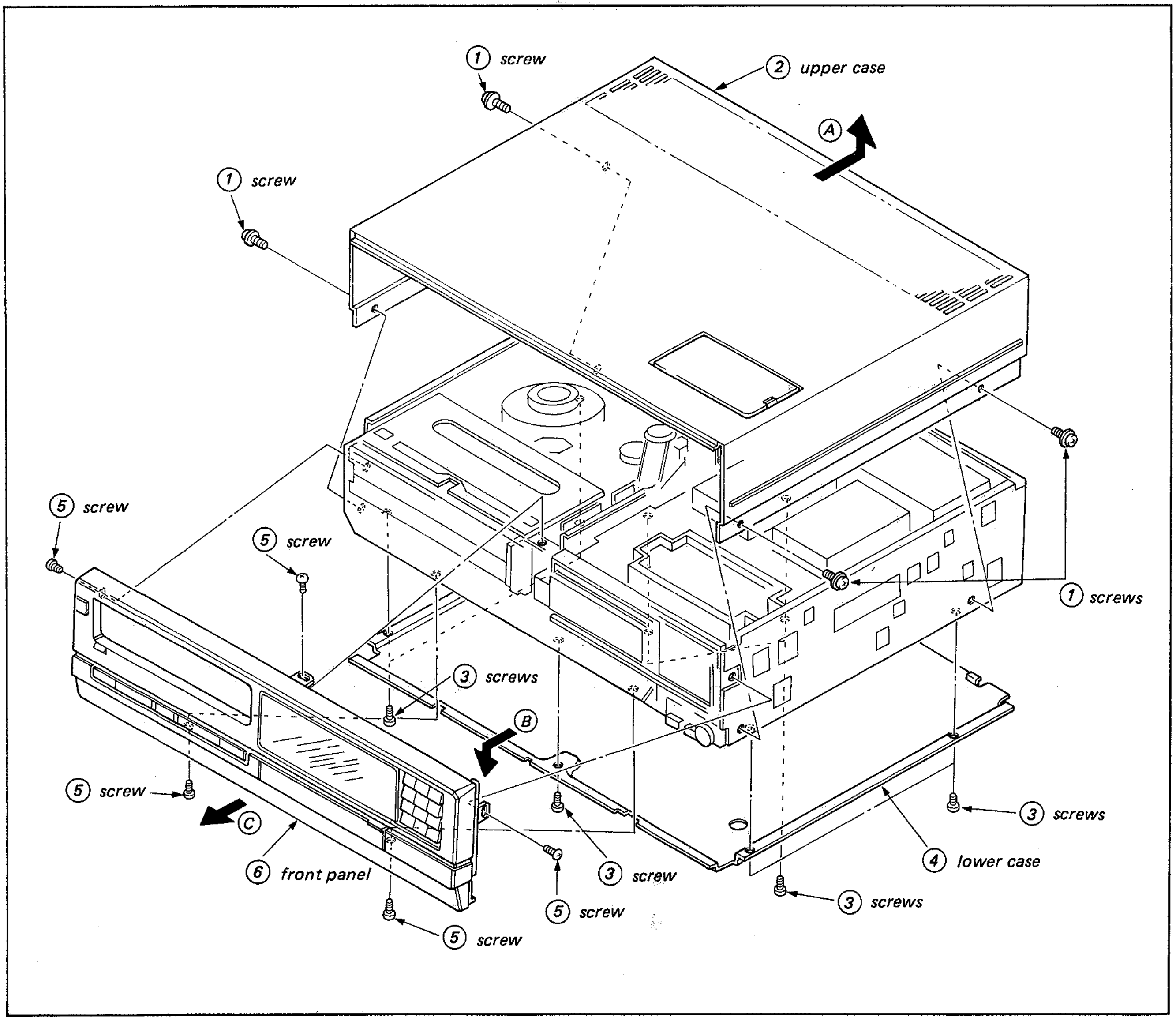
Example : Both event 1 and 2 have been programmed.
Turn-on day and time of event 1 → Turn-off day and time →
Turn-on day and time of event 2 → Turn-off day and time →
Present time

During actual timer recording, only the turn-off time of the event being recorded can be checked.

SECTION 2
DISASSEMBLY

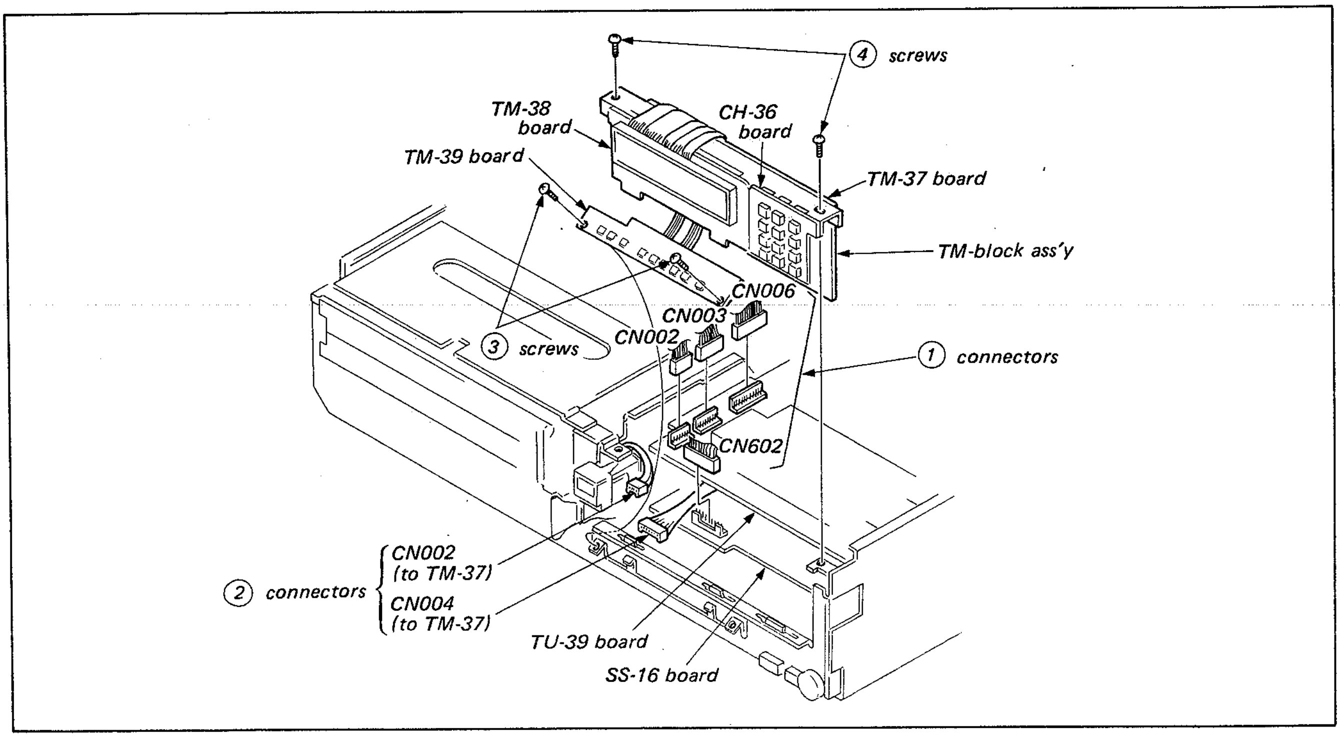
2-1. REMOVAL OF THE CASE AND FRONT PANEL

1) Remove the four screws ①.
2) Remove the upper case ② in the direction shown by the arrow Ⓐ.
3) Remove the seven screws ③ and the lower case ④ in the direction shown by the arrow Ⓑ.
4) Remove the five screws ⑤ and the front panel ⑥ in the direction shown by the arrow Ⓒ.


① screw
② upper case
Ⓐ
① screw
⑤ screw
⑤ screw
① screws
③ screws
Ⓑ
⑤ screw
Ⓒ
⑥ front panel
③ screw
⑤ screw
⑤ screw
③ screws
④ lower case
③ screws

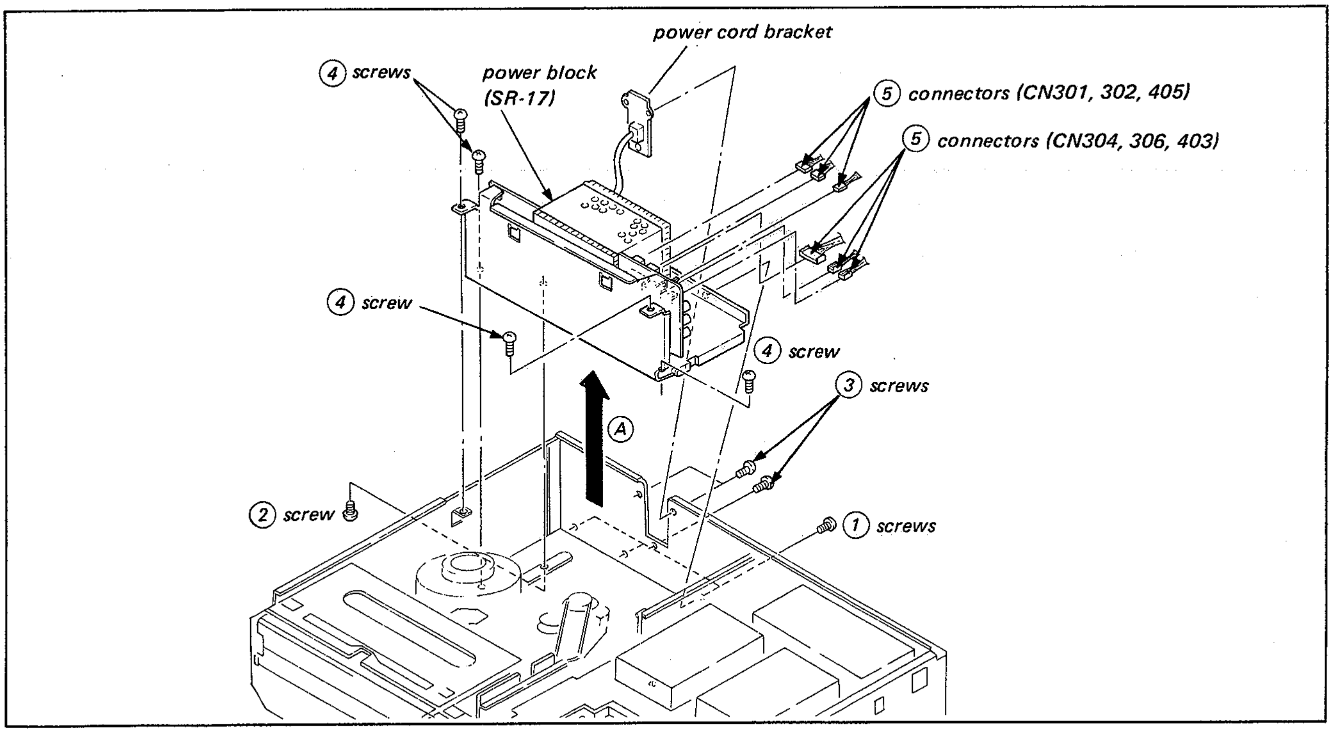
2-2. REMOVAL OF TM BLOCK ASS'Y

1) Pull out the four connectors ①.
2) Pull out the two connectors ②.
3) Remove two screws ③ and the TM-39 board.
4) Remove two screws ④ and the TM-block Ass'y.


④ screws
TM-38 board
CH-36 board
TM-39 board
TM-37 board
TM-block ass'y
CN006
CN003
CN002
③ screws
① connectors
CN602
② connectors
CN002 (to TM-37)
CN004 (to TM-37)
TU-39 board
SS-16 board

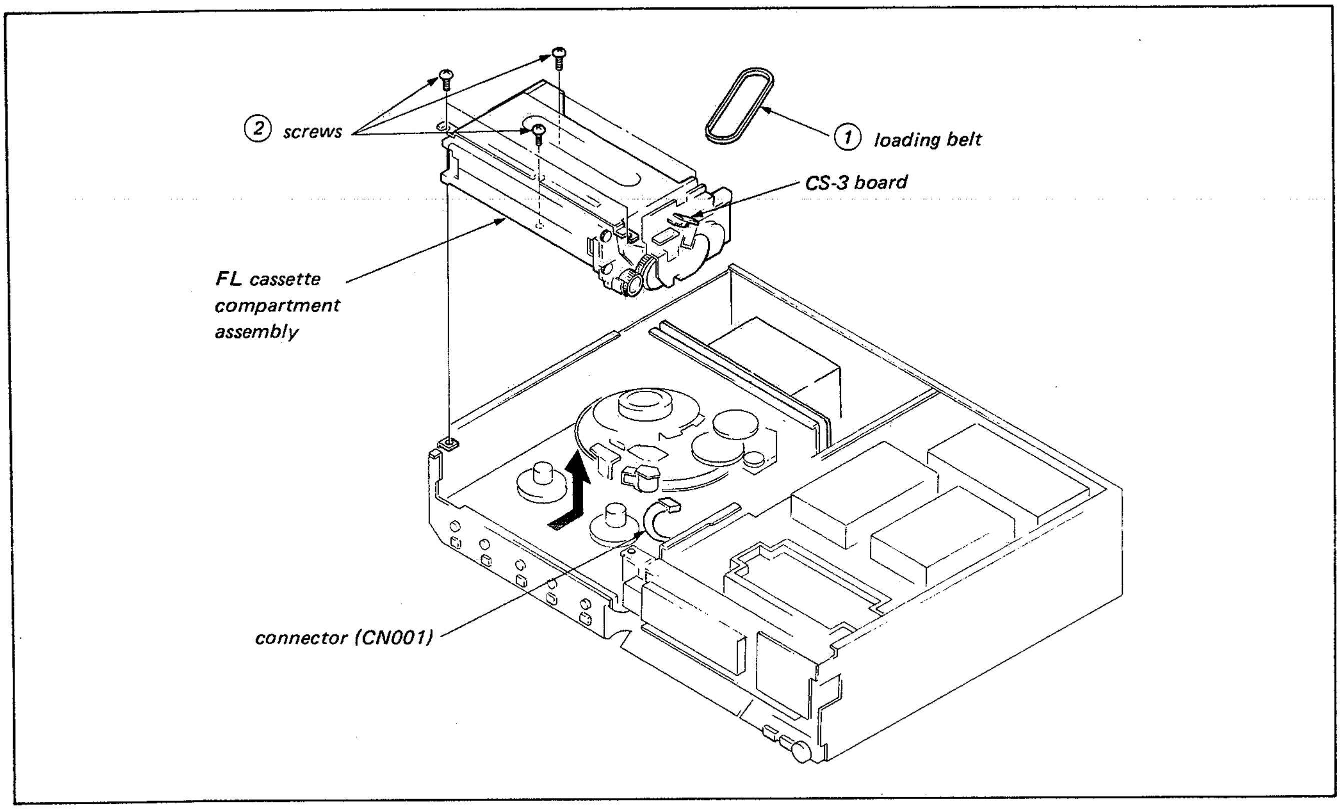
2-3. REMOVAL OF POWER BLOCK

1) Remove the three screws ① of the rear panel.
2) Remove the screw ② of the bottom plate.
3) Remove the three screws ③ and the power cord bracket.
4) Remove the four screws ④, holding the power block.
5) Pull out the six connectors ⑤ (CN301, 302, 304, 306, 403, 405), from the power block side.
6) Remove the power block in the direction shown by the arrow Ⓐ.


power cord bracket
④ screws
power block (SR-17)
⑤ connectors (CN301, 302, 405)
⑤ connectors (CN304, 306, 403)
④ screw
④ screw
③ screws
Ⓐ
② screw
① screws

2-4. REMOVAL OF FL CASSETTE COMPARTMENT ASSEMBLY

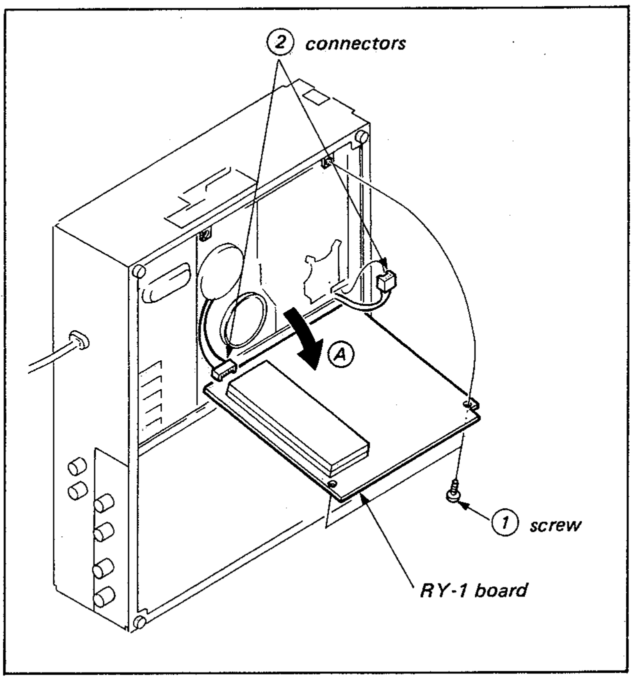
1) Loosen the loading belt ① exerting a force on the threading motor.
2) Remove the five mounting screws ② of the FL cassette compartment.
3) Disconnect the exposed connector from the CS-3 board (CN001) on the FL cassette compartment.
4) Lift the FL cassette compartment assembly in the direction shown by the arrow to remove.


② screws
① loading belt
CS-3 board
FL cassette compartment assembly
connector (CN001)

2-5. REMOVAL OF MECHANICAL CHASSIS BLOCK

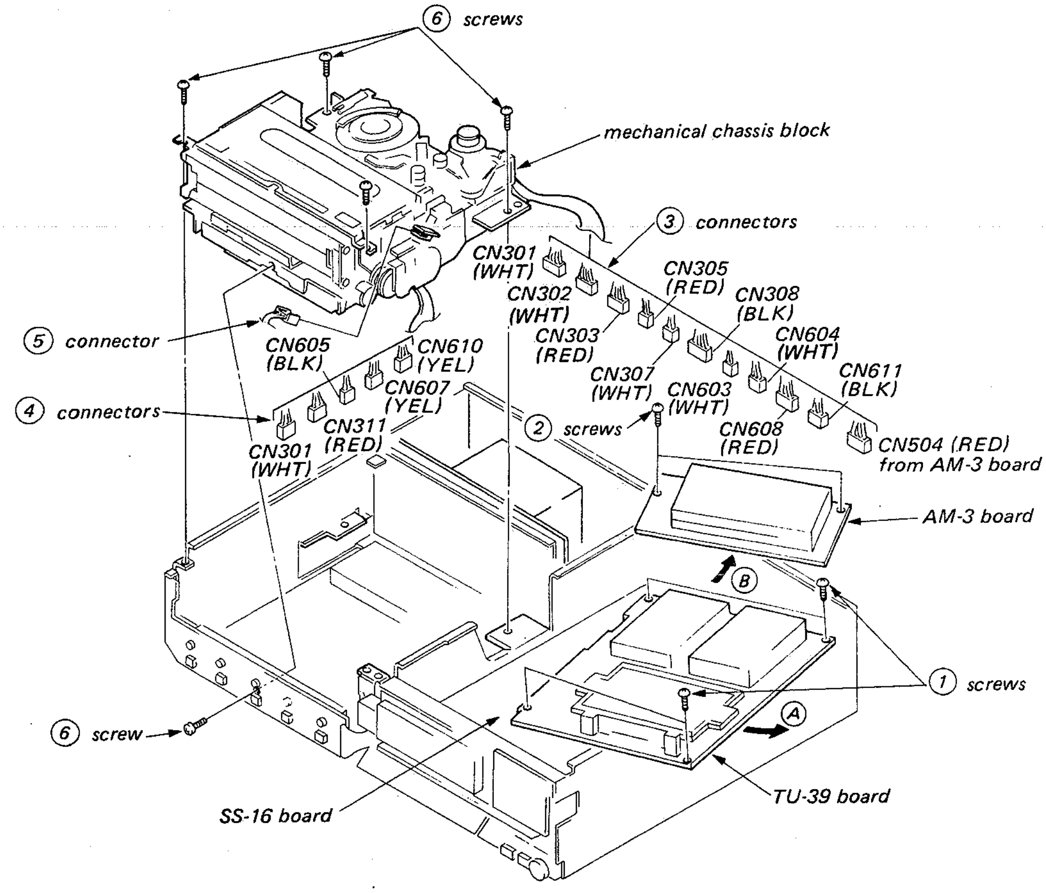
(1)

1) Stand the set with the right side panel on the bottom.
2) Remove the two screws ①, holding the RY-1 board.
3) Pull out the two connectors ②.
4) Remove the RY-1 board in the direction shown by the arrow Ⓐ.


② connectors
Ⓐ
① screw
RY-1 board

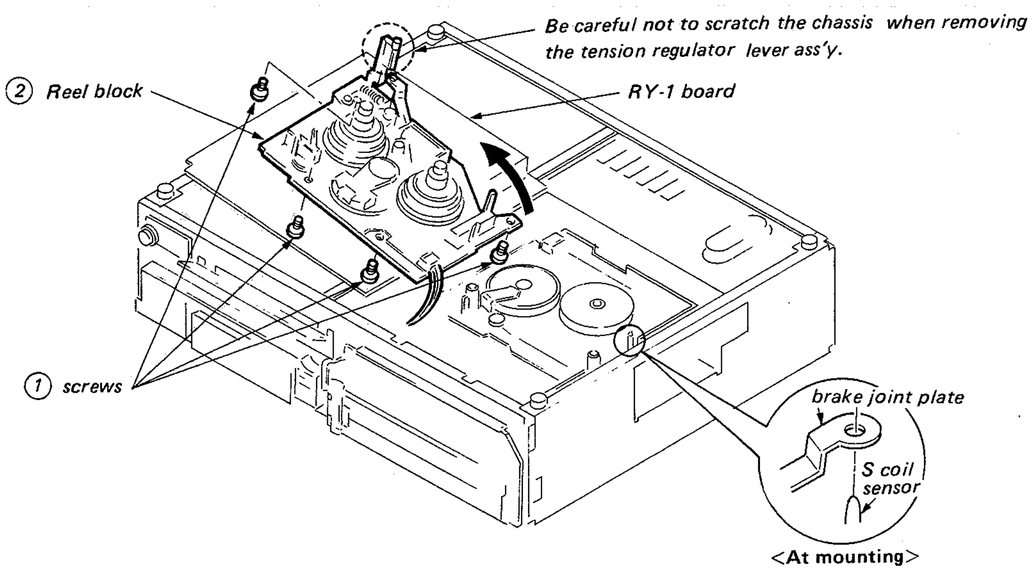
(2)

1) Remove the four screws ① and the TY-39 board in the direction shown by the arrow Ⓐ.
2) Remove the two screws ② and the AM-3 board in the direction shown by the arrow Ⓑ.
3) Pull out the ten connectors ③ from the SS-16 board and pull out the rest one from AM-3 board.
4) Pull out the five connectors ④ from the SS-16 board and pull out the connector ⑤.
5) Remove the five screws ⑥ and the mechanical chassis block.


⑥ screws
mechanical chassis block
③ connectors
CN301 (WHT)
CN302 (WHT)
CN303 (RED)
CN305 (RED)
CN308 (BLK)
CN604 (WHT)
CN307 (WHT)
CN603 (WHT)
CN611 (BLK)
CN608 (RED)
CN504 (RED) from AM-3 board
⑤ connector
CN605 (BLK)
CN610 (YEL)
CN607 (YEL)
④ connectors
CN311 (RED)
CN301 (WHT)
② screws
AM-3 board
Ⓑ
① screws
Ⓐ
⑥ screw
SS-16 board
TU-39 board

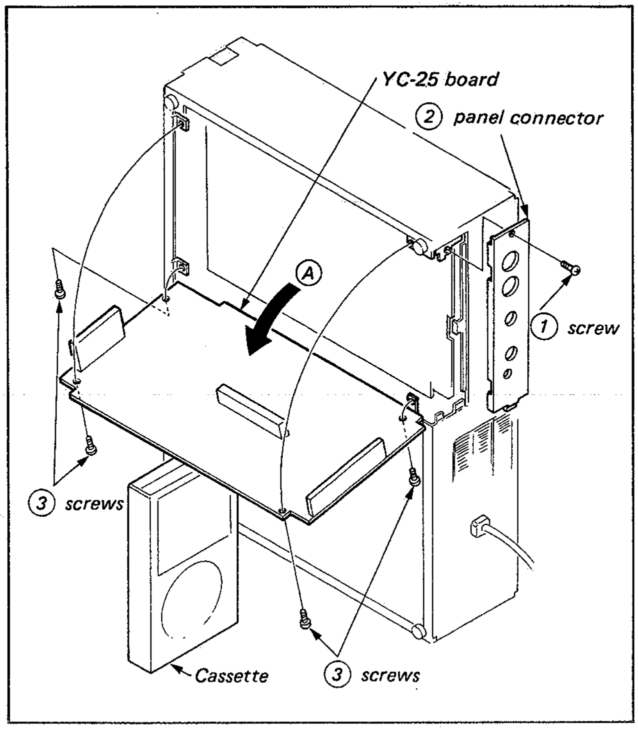
2-6. REMOVAL OF REEL ASS'Y

1) Place the set upside down.
2) Remove four screws ①.
3) Remove the reel block ②.


Be careful not to scratch the chassis when removing the tension regulator lever ass'y.
② Reel block
RY-1 board
① screws
brake joint plate
S coil sensor
<At mounting>

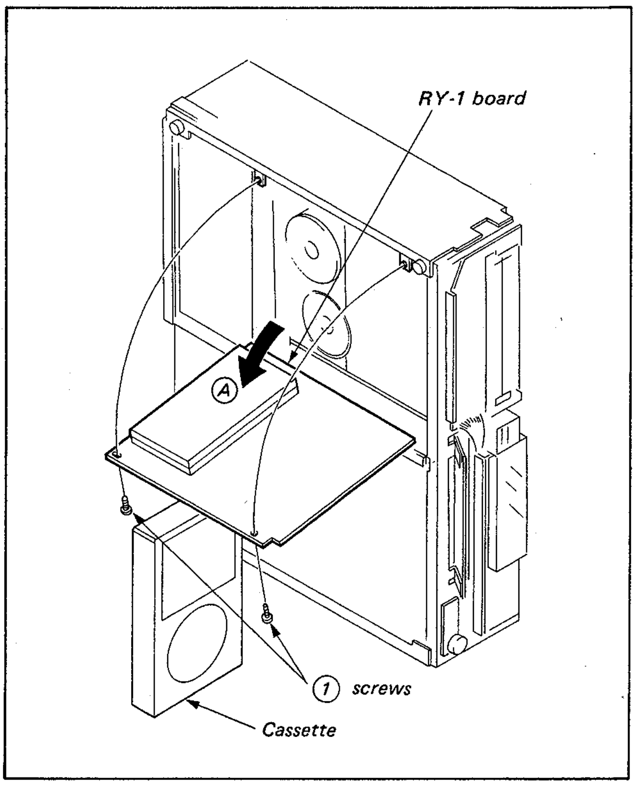
2-7. REMOVAL OF THE YC-25 BOARD

1) Stand the set with the power source side on the bottom.
2) Remove the screw ① and the panel connector ②.
3) Remove the four screws ③, holding the YC-25 board.
4) Swing open the YC-25 board in the direction shown by the arrow Ⓐ and rest it on a cassette.


YC-25 board
② panel connector
Ⓐ
① screw
③ screws
Cassette
③ screws

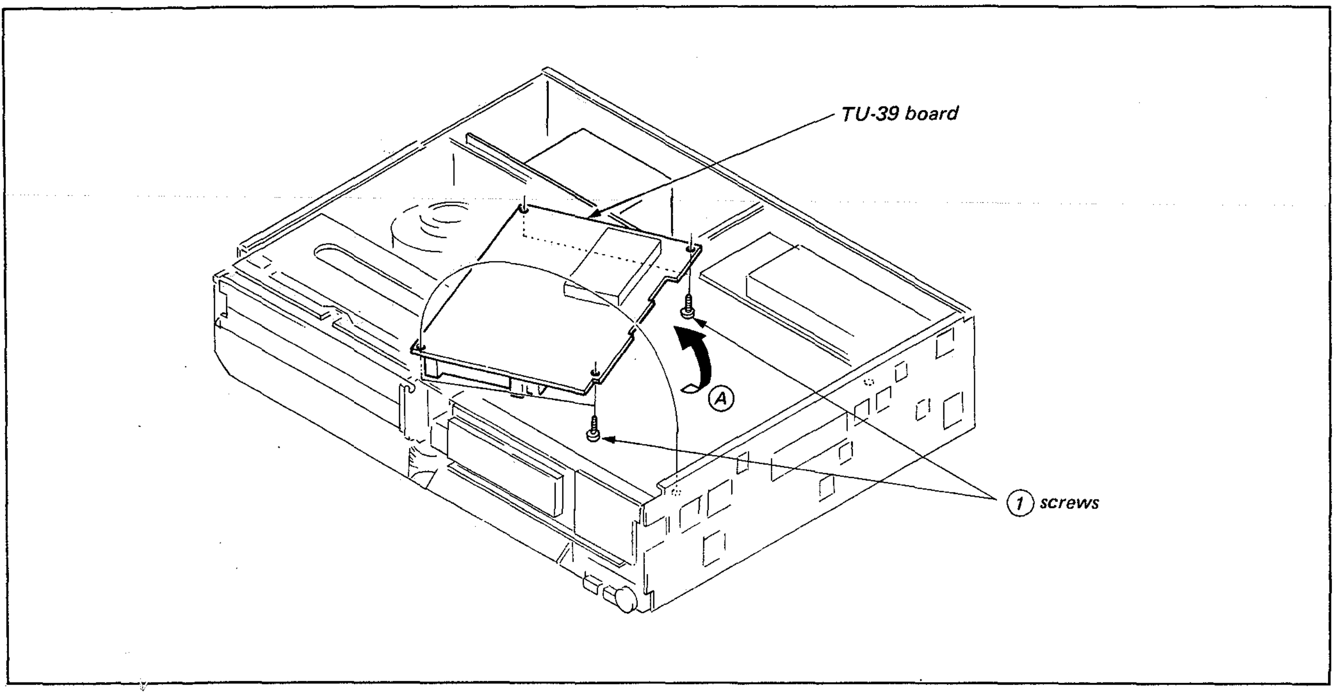
2-8. REMOVAL OF THE RY-1 BOARD

1) Stand the set with the right side panel on the bottom.
2) Remove the two screws ①, holding the RY-1 board.
3) Swing open the RY-1 board in the direction shown by the arrow Ⓐ and rest it on a cassette.


RY-1 board
Ⓐ
① screws
Cassette

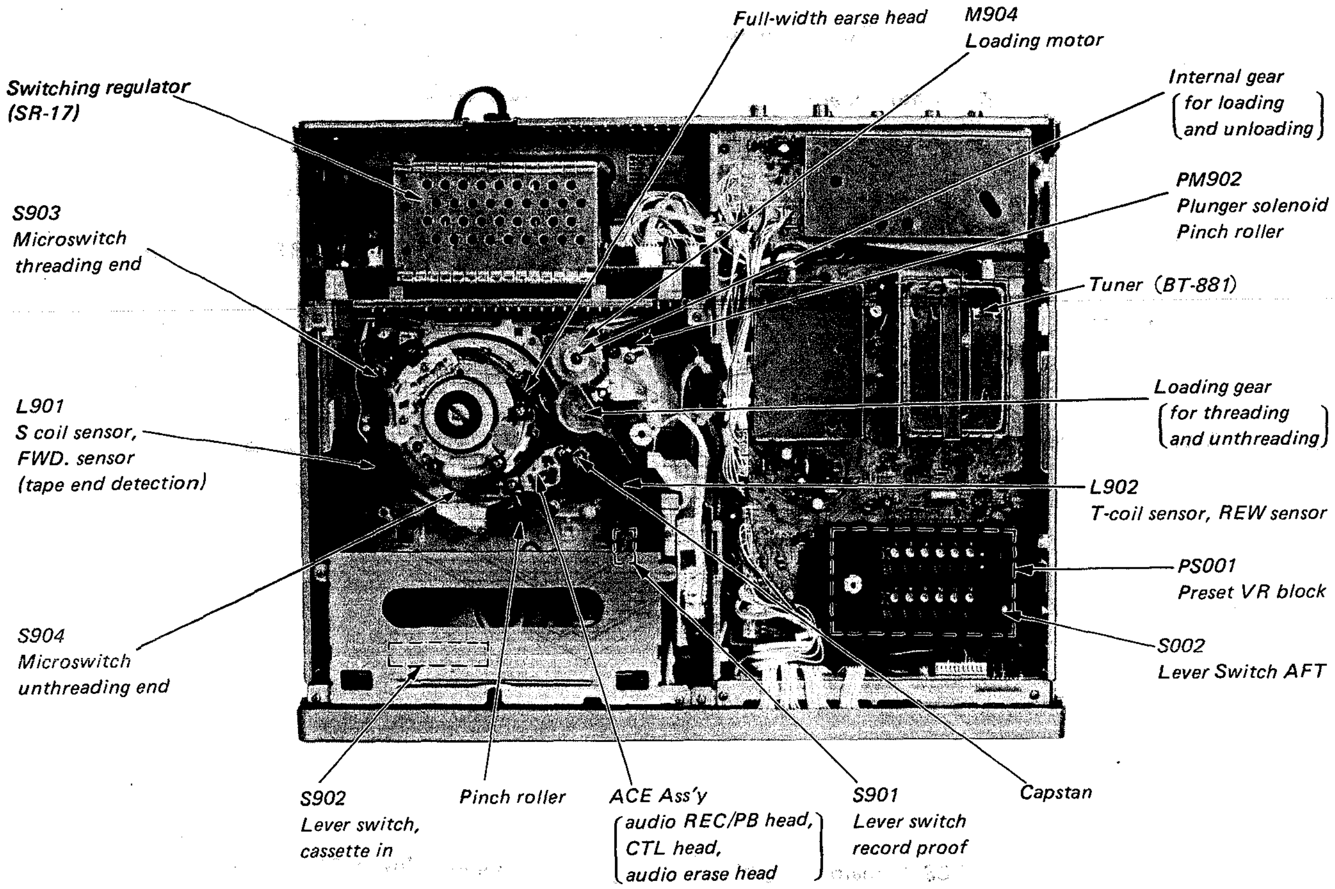
2-9. REMOVAL OF THE TU-39 BOARD

1) Remove the four screws ① holding the TU-39 board.
2) Remove the TU-39 board in the direction shown by the arrow Ⓐ.

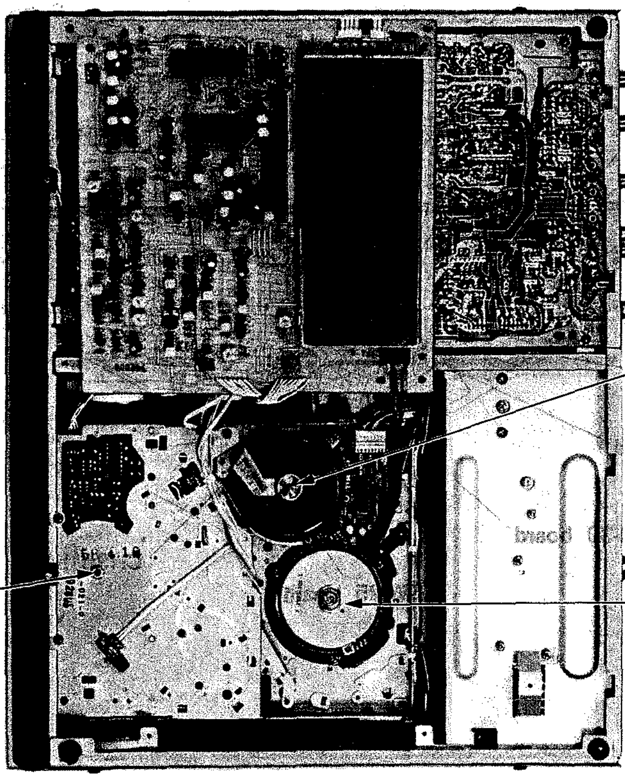

TU-39 board
Ⓐ
① screws

2-10. INTERNAL VIEWS

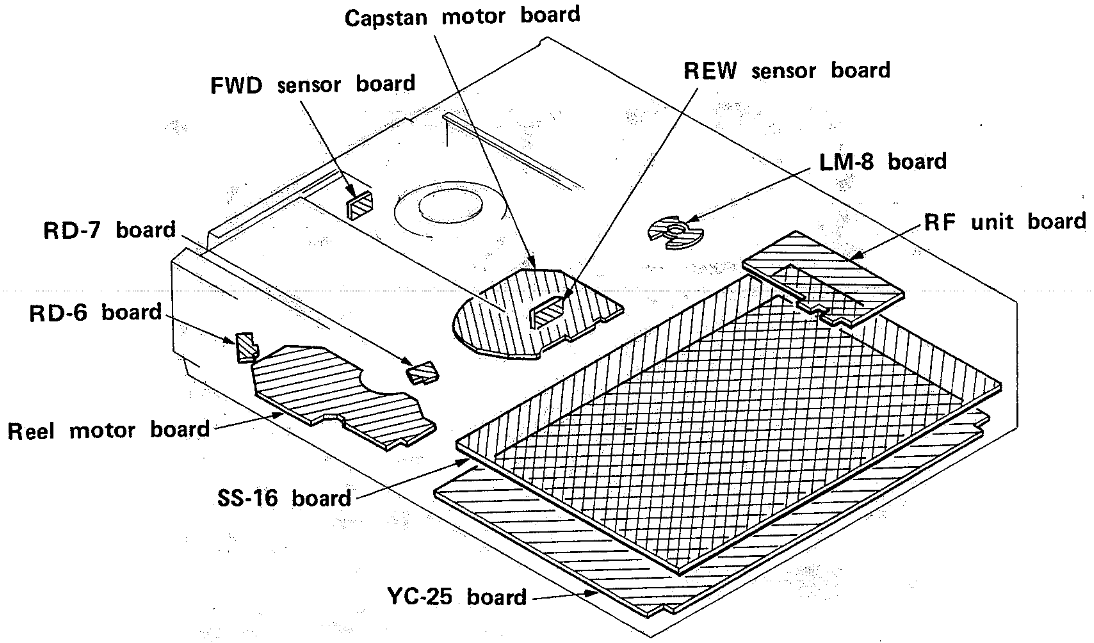
– Top side –


Full-width earse head
M904
Loading motor
Switching regulator
(SR-17)
Internal gear
for loading
and unloading
PM902
Plunger solenoid
Pinch roller
S903
Microswitch
threading end
Tuner (BT-881)
L901
S coil sensor,
FWD. sensor
(tape end detection)
Loading gear
for threading
and unthreading
L902
T-coil sensor, REW sensor
PS001
Preset VR block
S904
Microswitch
unthreading end
S002
Lever Switch AFT
S902
Lever switch,
cassette in
Pinch roller
ACE Ass'y
audio REC/PB head,
CTL head,
audio erase head
S901
Lever switch
record proof
Capstan

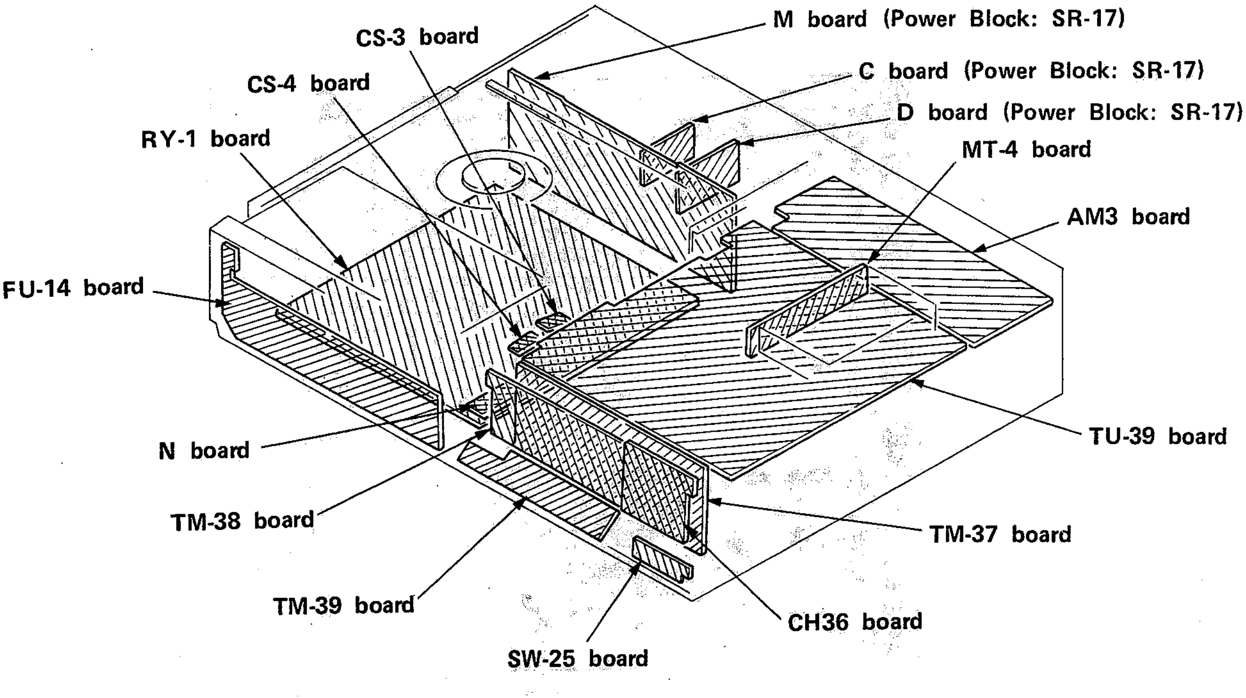
– Bottom side –


M902
Capstan motor Ass'y
M903
Reel motor Ass'y
M901
Drum motor Ass'y

2-11. BOARD ARRANGEMENT



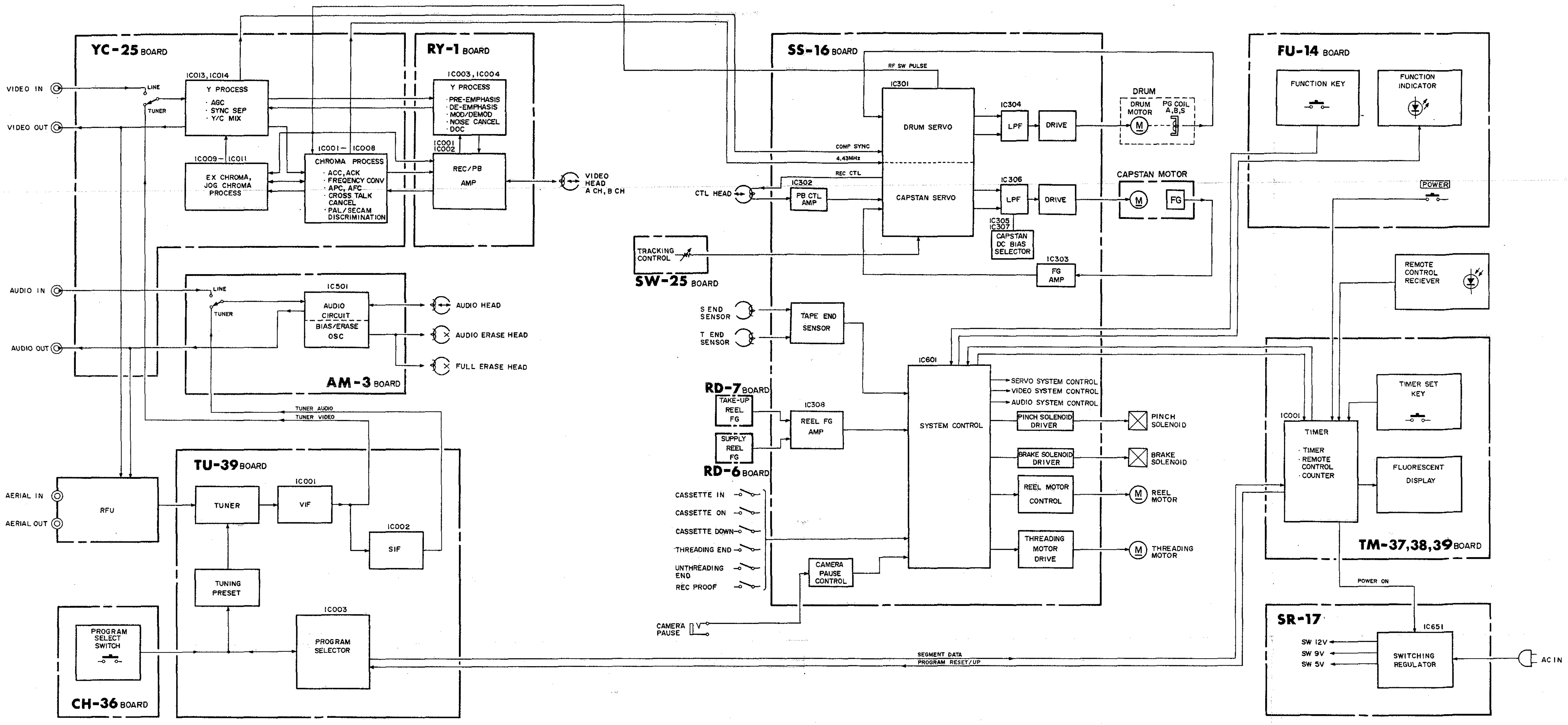
Capstan motor board
FWD sensor board
REW sensor board
LM-8 board
RF unit board
RD-7 board
RD-6 board
Reel motor board
SS-16 board
YC-25 board



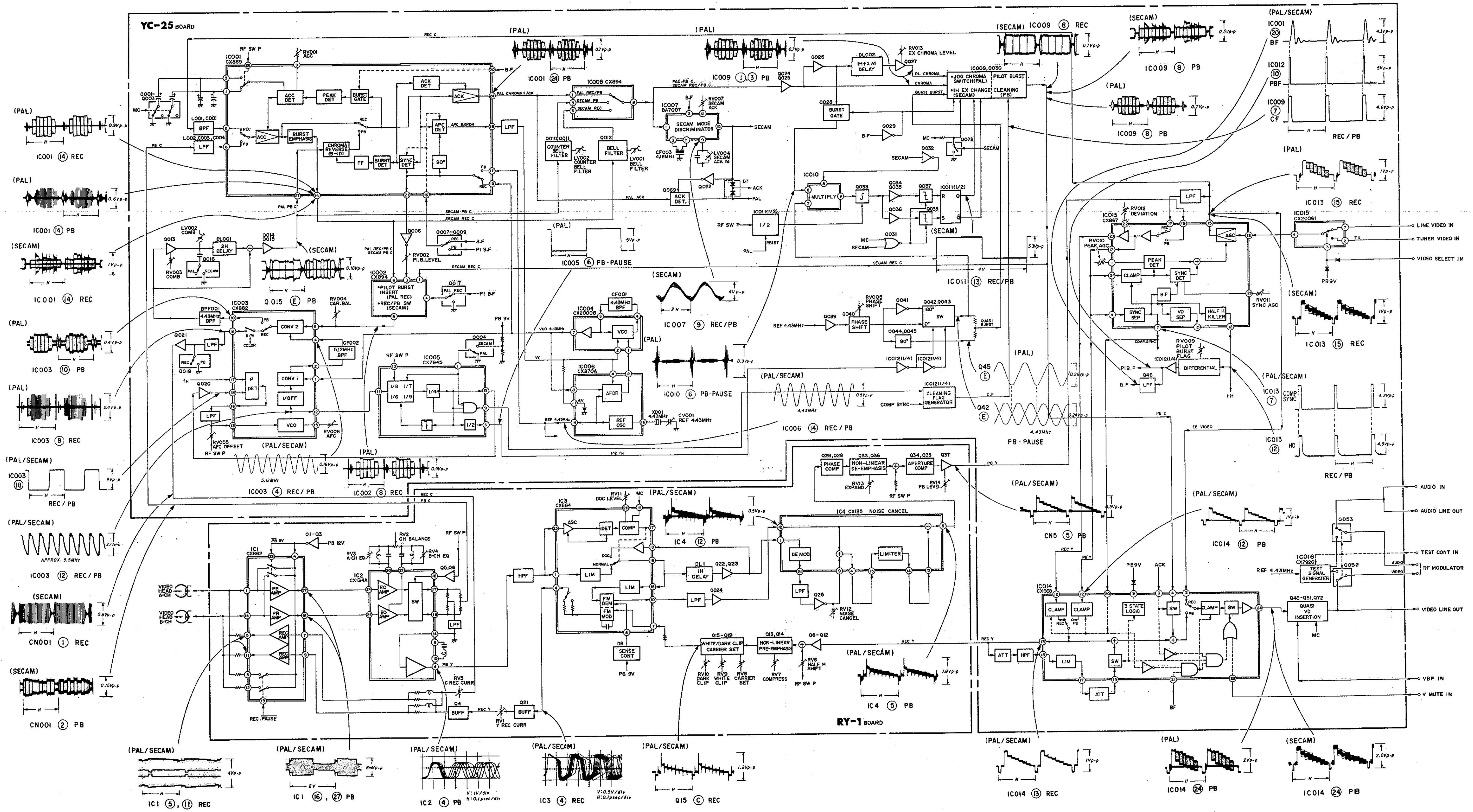
M board (Power Block: SR-17)
CS-3 board
C board (Power Block: SR-17)
CS-4 board
D board (Power Block: SR-17)
RY-1 board
MT-4 board
AM3 board
FU-14 board
TU-39 board
N board
TM-38 board
TM-37 board
TM-39 board
CH36 board
SW-25 board

SECTION 3
DIAGRAMS

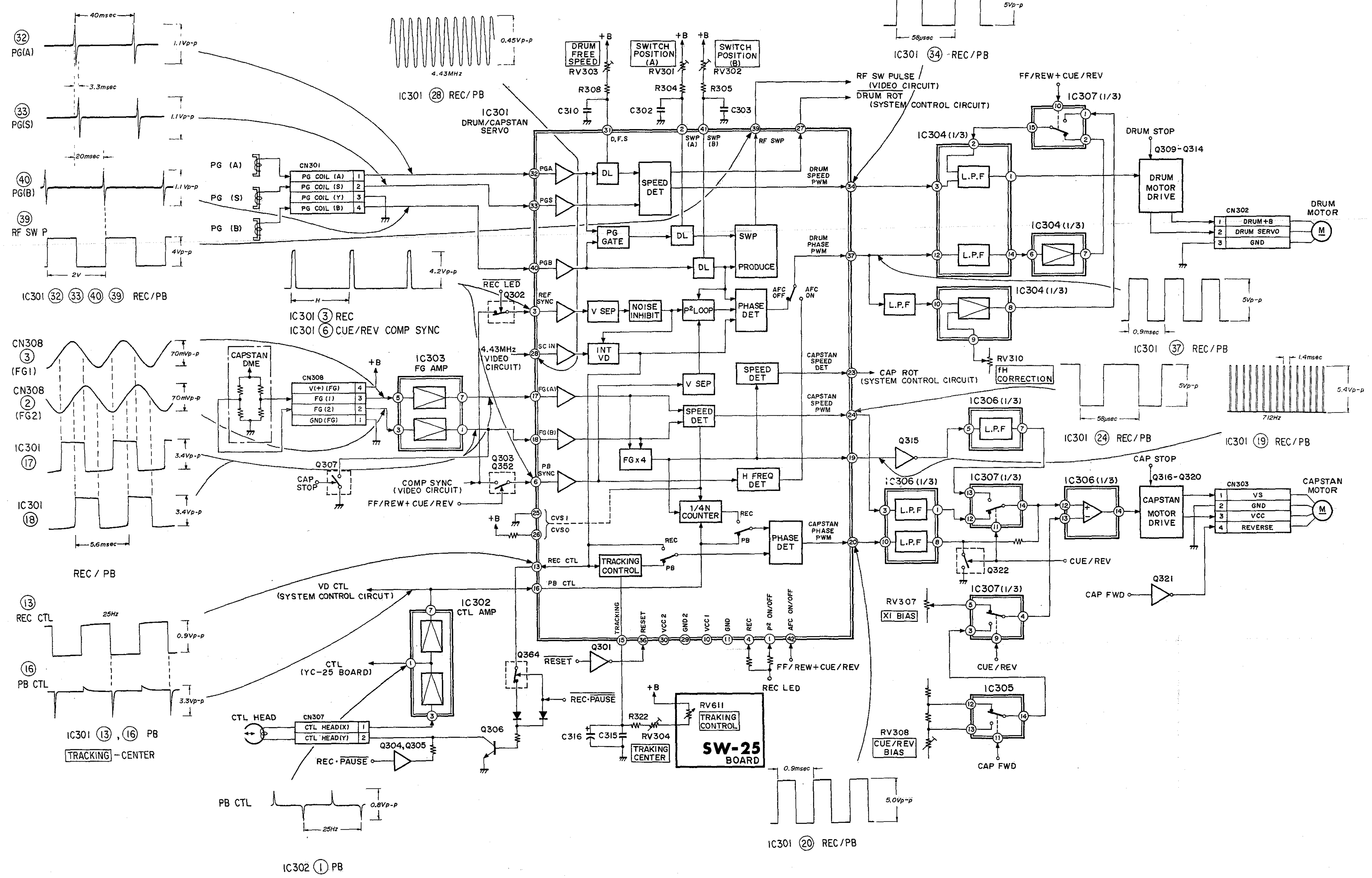
OVERALL BLOCK DIAGRAM


YC-25 BOARD
VIDEO IN
VIDEO OUT
LINE
TUNER
IC013, IC014
Y PROCESS
· AGC
· SYNC SEP
· Y/C MIX
IC009 – IC011
EX CHROMA, JOG CHROMA PROCESS
IC001 – IC008
CHROMA PROCESS
· ACC, ACK
· FREQENCY CONV
· APC, AFC
· CROSS TALK CANCEL
· PAL/SECAM DISCRIMINATION
RY-1 BOARD
IC003, IC004
Y PROCESS
· PRE-EMPHASIS
· DE-EMPHASIS
· MOD/DEMOD
· NOISE CANCEL
· DOC
IC001 IC002
REC/PB AMP
VIDEO HEAD A CH, B CH
AUDIO IN
AUDIO OUT
IC501
AUDIO CIRCUIT
BIAS/ERASE OSC
AUDIO HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
AM-3 BOARD
TUNER AUDIO
TUNER VIDEO
AERIAL IN
AERIAL OUT
RFU
TU-39 BOARD
TUNER
IC001
VIF
IC002
SIF
TUNING PRESET
IC003
PROGRAM SELECTOR
PROGRAM SELECT SWITCH
CH-36 BOARD
SS-16 BOARD
RF SW PULSE
IC301
DRUM SERVO
CAPSTAN SERVO
COMP SYNC
4.43MHz
REC CTL
IC302
PB CTL AMP
CTL HEAD
IC304
LPF
DRIVE
IC306
LPF
DRIVE
IC305 IC307
CAPSTAN DC BIAS SELECTOR
IC303
FG AMP
DRUM
DRUM MOTOR
PG COIL A,B,S
M
CAPSTAN MOTOR
M
FG
TRACKING CONTROL
SW-25 BOARD
S END SENSOR
T END SENSOR
TAPE END SENSOR
RD-7 BOARD
TAKE-UP REEL FG
SUPPLY REEL FG
RD-6 BOARD
IC308
REEL FG AMP
IC601
SYSTEM CONTROL
SERVO SYSTEM CONTROL
VIDEO SYSTEM CONTROL
AUDIO SYSTEM CONTROL
PINCH SOLENOID DRIVER
PINCH SOLENOID
BRAKE SOLENOID DRIVER
BRAKE SOLENOID
REEL MOTOR CONTROL
REEL MOTOR
THREADING MOTOR DRIVE
THREADING MOTOR
CASSETTE IN
CASSETTE ON
CASSETTE DOWN
THREADING END
UNTHREADING END
REC PROOF
CAMERA PAUSE CONTROL
CAMERA PAUSE
SEGMENT DATA
PROGRAM RESET/UP
FU-14 BOARD
FUNCTION KEY
FUNCTION INDICATOR
POWER
REMOTE CONTROL RECIEVER
TM-37,38,39 BOARD
IC001
TIMER
· TIMER
· REMOTE CONTROL
· COUNTER
TIMER SET KEY
FLUORESCENT DISPLAY
POWER ON
SR-17
IC651
SWITCHING REGULATOR
SW 12V
SW 9V
SW 5V
AC IN

VIDEO BLOCK DIAGRAM

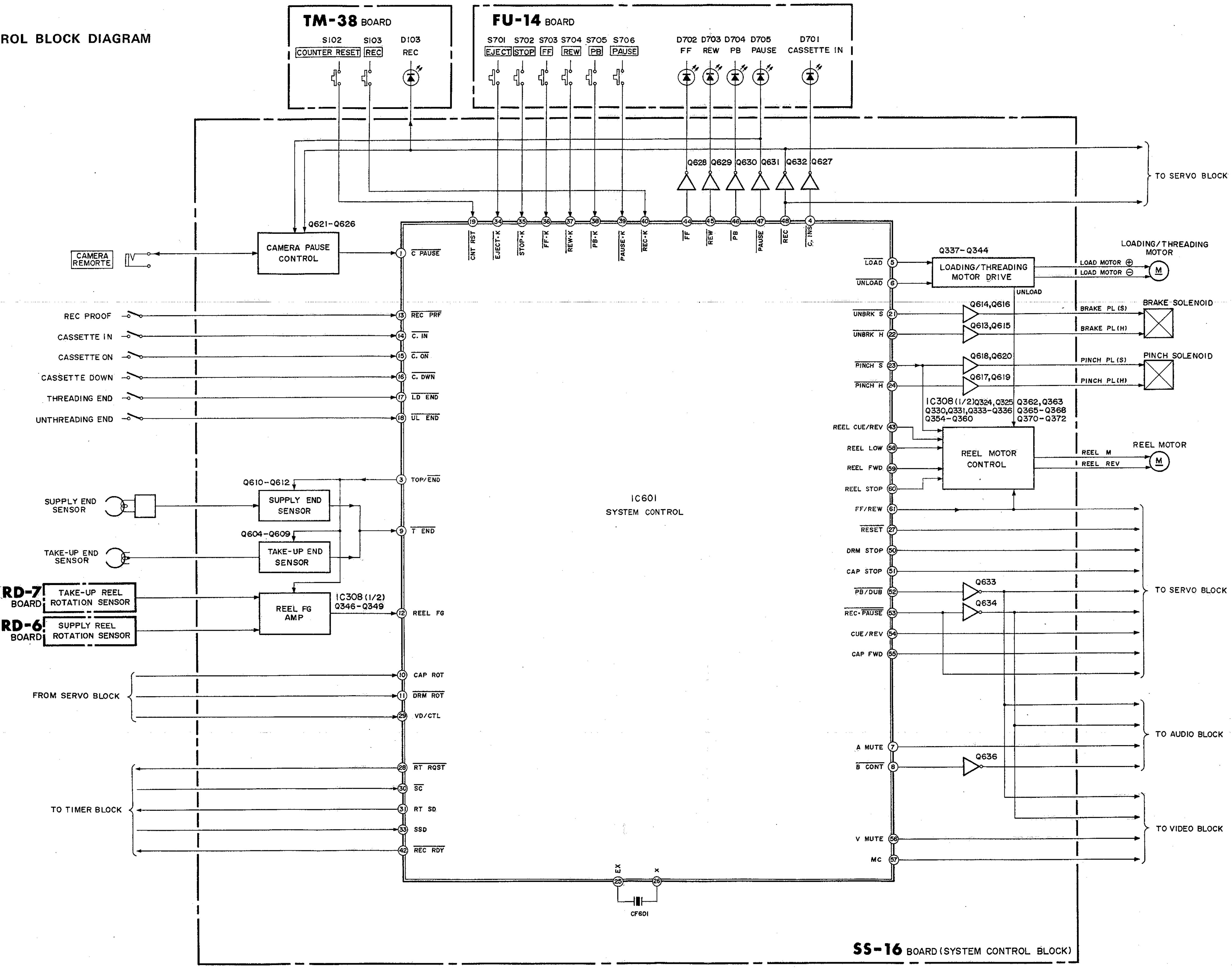

YC-25 BOARD
RY-1 BOARD
IC001 CX869
IC002 CX894
IC003 CX882
IC004 CX20008
IC005 CX7945
IC006 CX870A
IC007 BA7007
IC008 CX894
IC009, Q030
IC010
IC011 (1/2)
IC012 (1/4)
IC013 CX867
IC014 CX868
IC015 CX20061
IC016 CX7926
IC1 CX862
IC2 CX134A
IC3 CX864
IC4 CX135 NOISE CANCEL
ACC DET
PEAK DET
BURST GATE
ACK DET
ACK
APC DET
BURST EMPHASIS
CHROMA REVERSE (B-ID)
FF
BURST DET
SYNC DET
90°
LPF
BPF
HPF
SECAM MODE DISCRIMINATOR
COUNTER BELL FILTER
BELL FILTER
2H DELAY
1H DELAY
CONV 2
CONV 1
1/8FF
VCO
AFDR
REF OSC
MULTIPLY
PHASE SHIFT
SW
CLEANING FLAG GENERATOR
PILOT BURST INSERT (PAL REC)
REC/PB SW (SECAM)
JOG CHROMA SWITCH (PAL)
1H EX CHANGE (SECAM)
PILOT BURST CLEANING (PB)
AGC
CLAMP
SYNC DET
SYNC SEP
VD SEP
HALF H KILLER
DIFFERENTIAL
PHASE COMP
NON-LINEAR DE-EMPHASIS
APERTURE COMP
DE MOD
LIMITER
FM DEM
FM MOD
SENSE CONT
WHITE/DARK CLIP CARRIER SET
NON-LINEAR PRE-EMPHASIS
PB AMP
REC AMP
EQ AMP
BUFF
3 STATE LOGIC
ATT
LIM
TEST SIGNAL GENERATOR
QUASI VD INSERTION
VIDEO HEAD A-CH
VIDEO HEAD B-CH
LINE VIDEO IN
TUNER VIDEO IN
VIDEO SELECT IN
AUDIO IN
AUDIO LINE OUT
TEST CONT IN
RF MODULATOR
VIDEO LINE OUT
VBP IN
V MUTE IN
REF 4.43MHz
(PAL)
(SECAM)
(PAL/SECAM)
IC001 ⑭ REC
IC001 ⑭ PB
IC003 ⑩ PB
IC003 ⑧ REC
IC003 ⑱ REC / PB
IC003 ⑫ REC / PB
CN001 ① REC
CN001 ② PB
IC001 ㉔ PB
IC009 ①,③ PB
IC009 ⑧ REC
IC009 ⑧ PB
IC005 ⑥ PB·PAUSE
IC007 ⑨ REC/PB
IC010 ⑥ PB·PAUSE
IC006 ⑭ REC / PB
IC011 ⑬ REC/PB
Q015 Ⓔ PB
IC003 ④ REC / PB
IC002 ⑧ REC
IC4 ⑫ PB
IC4 ⑤ PB
CN5 ⑤ PB
IC013 ⑮ REC
IC013 ⑦
IC013 ⑫
IC014 ⑫ PB
IC014 ⑬ REC
IC014 ㉔ PB
IC1 ⑤, ⑪ REC
IC1 ⑯, ㉗ PB
IC2 ④ PB
IC3 ④ REC
Q15 Ⓒ REC
PB · PAUSE
REC / PB

SERVO BLOCK DIAGRAM



㉜ PG(A)
40msec
1.1Vp-p
3.3msec
㉝ PG(S)
1.1Vp-p
20msec
㊵ PG(B)
1.1Vp-p
㊴ RF SW P
2V
4Vp-p
IC301 ㉜ ㉝ ㊵ ㊴ REC/PB
0.45Vp-p
4.43MHz
IC301 ㉘ REC/PB
4.2Vp-p
H
IC301 ③ REC
IC301 ⑥ CUE/REV COMP SYNC
PG (A)
PG (S)
PG (B)
CN301
PG COIL (A)
PG COIL (S)
PG COIL (Y)
PG COIL (B)
CN308 ③ (FG1)
70mVp-p
CN308 ② (FG2)
70mVp-p
IC301 ⑰
3.4Vp-p
IC301 ⑱
3.4Vp-p
5.6msec
REC / PB
CAPSTAN DME
CN308
V(+) (FG)
FG (1)
FG (2)
GND (FG)
+B
IC303 FG AMP
Q307
CAP STOP
Q303 Q352
COMP SYNC (VIDEO CIRCUIT)
FF/REW+CUE/REV
REC LED
Q302
4.43MHz VIDEO CIRCUIT)
⑬ REC CTL
25Hz
0.9Vp-p
⑯ PB CTL
3.3Vp-p
IC301 ⑬, ⑯ PB
TRACKING - CENTER
VD CTL (SYSTEM CONTROL CIRCUT)
IC302 CTL AMP
CTL (YC-25 BOARD)
CTL HEAD
CN307
CTL HEAD(X)
CTL HEAD(Y)
Q304,Q305
REC·PAUSE
Q306
Q364
RESET
REC·PAUSE
PB CTL
0.8Vp-p
25Hz
IC302 ① PB
DRUM FREE SPEED
RV303
R308
C310
SWITCH POSITION (A)
RV301
R304
C302
SWITCH POSITION (B)
RV302
R305
C303
+B
IC301 DRUM/CAPSTAN SERVO
D.F.S
SWP (A)
SWP (B)
RF SWP
PGA
PGS
PGB
REF SYNC
SC IN
FG(A)
FG(B)
PB SYNC
DL
SPEED DET
PG GATE
DL
SWP
DL
PRODUCE
V SEP
NOISE INHIBIT
P² LOOP
PHASE DET
AFC OFF
AFC ON
INT VD
V SEP
SPEED DET
SPEED DET
FGx4
H FREQ DET
1/4N COUNTER
REC
PB
PHASE DET
REC
TRACKING CONTROL
PB
REC CTL
PB CTL
CVS I
CVSO
DRUM SPEED PWM
DRUM PHASE PWM
CAPSTAN SPEED DET
CAPSTAN SPEED PWM
CAPSTAN PHASE PWM
TRACKING
RESET
VCC2
GND2
VCC1
GND
REC
P² ON/OFF
AFC ON/OFF
Q301
FF/REW+CUE/REV
REC LED
+B
R322
RV304
C316
C315
TRAKING CENTER
RV611
TRAKING CONTROL
SW-25 BOARD
0.9msec
5.0Vp-p
IC301 ⑳ REC/PB
5Vp-p
58μsec
IC301 ㉞ REC/PB
RF SW PULSE (VIDEO CIRCUIT)
DRUM ROT (SYSTEM CONTROL CIRCUIT)
FF/REW+CUE/REV
IC307 (1/3)
IC304 (1/3)
L.P.F
L.P.F
IC304 (1/3)
DRUM STOP
Q309-Q314
DRUM MOTOR DRIVE
CN302
DRUM+B
DRUM SERVO
GND
DRUM MOTOR
M
L.P.F
IC304 (1/3)
RV310
fH CORRECTION
5Vp-p
0.9msec
IC301 ㊲ REC/PB
CAP ROT (SYSTEM CONTROL CIRCUIT)
5Vp-p
58μsec
IC301 ㉔ REC/PB
1.4msec
5.4Vp-p
712Hz
IC301 ⑲ REC/PB
IC306 (1/3)
L.P.F
Q315
IC306 (1/3)
L.P.F
L.P.F
IC307 (1/3)
IC306 (1/3)
CAP STOP
Q316-Q320
CAPSTAN MOTOR DRIVE
CN303
VS
GND
VCC
REVERSE
CAPSTAN MOTOR
M
Q322
CUE/REV
Q321
CAP FWD
RV307
X1 BIAS
IC307 (1/3)
CUE/REV
IC305
RV308
CUE/REV BIAS
CAP FWD

SYSTEM CONTROL BLOCK DIAGRAM


TM-38 BOARD
S102
S103
D103
COUNTER RESET
REC
REC
FU-14 BOARD
S701
S702
S703
S704
S705
S706
EJECT
STOP
FF
REW
PB
PAUSE
D702
D703
D704
D705
D701
FF
REW
PB
PAUSE
CASSETTE IN
TO SERVO BLOCK
Q628
Q629
Q630
Q631
Q632
Q627
Q621-Q626
CAMERA REMORTE
CAMERA PAUSE CONTROL
C PAUSE
CNT RST
EJECT-K
STOP-K
FF-K
REW-K
PB-K
PAUSE-K
REC-K
FF
REW
PB
PAUSE
REC
C. INS
LOAD
UNLOAD
Q337-Q344
LOADING/THREADING MOTOR DRIVE
UNLOAD
LOADING/THREADING MOTOR
LOAD MOTOR ⊕
LOAD MOTOR ⊖
M
REC PROOF
CASSETTE IN
CASSETTE ON
CASSETTE DOWN
THREADING END
UNTHREADING END
REC PRF
C. IN
C. ON
C. DWN
LD END
UL END
UNBRK S
UNBRK H
Q614,Q616
Q613,Q615
BRAKE PL (S)
BRAKE PL (H)
BRAKE SOLENOID
PINCH S
PINCH H
Q618,Q620
Q617,Q619
PINCH PL (S)
PINCH PL (H)
PINCH SOLENOID
IC308 (1/2) Q324, Q325 Q362, Q363
Q330, Q331, Q333-Q336 Q365-Q368
Q354-Q360 Q370-Q372
REEL CUE/REV
REEL LOW
REEL FWD
REEL STOP
REEL MOTOR CONTROL
REEL M
REEL REV
REEL MOTOR
M
Q610-Q612
TOP/END
SUPPLY END SENSOR
SUPPLY END SENSOR
IC601
SYSTEM CONTROL
Q604-Q609
T END
TAKE-UP END SENSOR
TAKE-UP END SENSOR
RD-7 BOARD
TAKE-UP REEL ROTATION SENSOR
RD-6 BOARD
SUPPLY REEL ROTATION SENSOR
REEL FG AMP
IC308 (1/2)
Q346-Q349
REEL FG
FF/REW
RESET
DRM STOP
CAP STOP
PB/DUB
REC·PAUSE
CUE/REV
CAP FWD
Q633
Q634
TO SERVO BLOCK
FROM SERVO BLOCK
CAP ROT
DRM ROT
VD/CTL
TO AUDIO BLOCK
A MUTE
B CONT
Q636
TO TIMER BLOCK
RT RQST
SC
RT SD
SSD
REC RDY
TO VIDEO BLOCK
V MUTE
MC
EX
X
CF601
SS-16 BOARD (SYSTEM CONTROL BLOCK)

SYSTEM CONTROL CIRCUIT AND MECHANISM BLOCK INTERFACE

MODE / SIGNAL	I/O	Pin No.	EJECTED	LOADING	THREADING	STOP	UN-THREADING	UN-LOADING	FF	REW	PB	PB·PAUSE	PICTURE SEARCH		REC	REC·PAUSE	TIMER REC	FR SEARCH	
													CUE	REV				CUE	REV
$\overline{\text{REC PROOF}}$	I	IC601 13pin	H	H	H/L	H/L	H/L	H	H/L	H/L	H/L	H/L	H/L	H/L	L	L	L	H/L	H/L
$\overline{\text{C·IN}}$	I	IC601 14pin	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{C·ON}}$	I	IC601 15pin	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{C·DWN}}$	I	IC601 16pin	H	H	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{LD END}}$	I	IC601 17pin	H	H	H	L	H	H	L	L	L	L	L	L	L	L	L	L	L
$\overline{\text{UL END}}$	I	IC601 18pin	L	L	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{UNBRK S}}$	O	IC601 21pin	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{UNBRK H}}$	O	IC601 22pin	H	H	L	H	L	H	L	L	L	H	L	L	L	H	L	L	L
$\overline{\text{PINCH S}}$	O	IC601 23pin	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{PINCH H}}$	O	IC601 24pin	H	L	H	H	H	L	H	H	L	H	L	L	L	H	L	H	H
$\overline{\text{LOAD}}$	O	IC601 5pin	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{UNLOAD}}$	O	IC601 6pin	H	H	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H

SYSTEM CONTROL CIRCUIT AND REMOTE CONTROL/TIMER CIRCUIT INTERFACE

MODE / SIGNAL	I/O	Pin No.	STOP	FF	REW	PB	PB·PAUSE	PICTURE SEARCH		REC	REC·PAUSE	TIMER REC	FR SEARCH	
								CUE	REV				CUE	REV
$\overline{\text{RT RQST}}$	I	IC601 28pin												
RTSD	I	IC601 31pin												
$\overline{\text{COUNTER RESET}}$	I	IC601 19pin												
SSD	O	IC601 33pin												
$\overline{\text{SC}}$	O	IC601 30pin												
$\overline{\text{REC READY}}$	O	IC601 42pin	H/L	H	H	H	H	H	H	H	H	L	H	H

SYSTEM CONTROL CIRCUIT AND FUNCTION BLOCK

MODE / SIGNAL	I/O	Pin No.	STOP	FF
$\overline{\text{EJECT·K}}$	I	IC601 34pin	H	H
$\overline{\text{STOP·K}}$	I	IC601 35pin	H	H
$\overline{\text{FF·K}}$	I	IC601 36pin	H	H
$\overline{\text{REW·K}}$	I	IC601 37pin	H	H
$\overline{\text{PB·K}}$	I	IC601 38pin	H	H
$\overline{\text{PAUSE·K}}$	I	IC601 39pin	H	H
$\overline{\text{REC·K}}$	I	IC601 40pin	H	H
$\overline{\text{FF}}$	O	IC601 44pin	H	L
$\overline{\text{REW}}$	O	IC601 45pin	H	H
$\overline{\text{PB}}$	O	IC601 46pin	H	H
$\overline{\text{PAUSE}}$	O	IC601 47pin	H	H
$\overline{\text{REC}}$	O	IC601 48pin	H	H
$\overline{\text{C·IN}}$	O	IC601 4pin	L	L

SYSTEM CONTROL CIRCUIT AND ITS PERIPHERAL C

MODE / SIGNAL	I/O	Pin No.	STOP	FF	F
TEND*1	I	IC601 9pin	H	H	
C·PAUSE*2	I	IC601 1pin	H	H	
TOP/END	O	IC601 3pin	L	L	

*1 "L" at tape end.

*2 Camera pause signal.

PB·PAUSE	PICTURE SEARCH CUE	PICTURE SEARCH REV	REC	REC·PAUSE	TIMER REC	FR SEARCH CUE	FR SEARCH REV
H/L	H/L	H/L	L	L	L	H/L	H/L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
L	L	L	L	L	L	L	L
H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H
H	L	L	L	H	L	L	L
H	H	H	H	H	H	H	H
H	L	L	L	H	L	H	H
H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H

TIMER REC	FR SEARCH CUE	FR SEARCH REV
L	H	H

SYSTEM CONTROL CIRCUIT AND FUNCTION BLOCK INTERFACE

SIGNAL \ MODE	I/O	Pin No.	STOP	FF	REW	PB	PB·PAUSE	PICTURE SEARCH CUE	PICTURE SEARCH REV	REC	REC·PAUSE	TIMER REC	FR SEARCH CUE	FR SEARCH REV
$\overline{\mathrm{EJECT\cdot K}}$	I	IC601 34pin	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\mathrm{STOP\cdot K}}$	I	IC601 35pin	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\mathrm{FF\cdot K}}$	I	IC601 36pin	H	H	H	H	H	L	H	H	H	H	L	H
$\overline{\mathrm{REW\cdot K}}$	I	IC601 37pin	H	H	H	H	H	H	L	H	H	H	H	L
$\overline{\mathrm{PB\cdot K}}$	I	IC601 38pin	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\mathrm{PAUSE\cdot K}}$	I	IC601 39pin	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\mathrm{REC\cdot K}}$	I	IC601 40pin	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\mathrm{FF}}$	O	IC601 44pin	H	L	H	H	H	L	H	H	H	H	L	H
$\overline{\mathrm{REW}}$	O	IC601 45pin	H	H	L	H	H	H	L	H	H	H	H	L
$\overline{\mathrm{PB}}$	O	IC601 46pin	H	H	H	L	L	L	L	H	H	H	L	L
$\overline{\mathrm{PAUSE}}$	O	IC601 47pin	H	H	H	H	L	H	H	H	L	H	H	H
$\overline{\mathrm{REC}}$	O	IC601 48pin	H	H	H	H	H	H	H	L	L	L	H	H
$\overline{\mathrm{C\cdot IN}}$	O	IC601 4pin	L	L	L	L	L	L	L	L	L	L	L	L

SYSTEM CONTROL CIRCUIT AND ITS PERIPHERAL CIRCUIT INTERFACE

SIGNAL \ MODE	I/O	Pin No.	STOP	FF	REW	PB	PB·PAUSE	PICTURE SEARCH CUE	PICTURE SEARCH REV	REC	REC·PAUSE	TIMER REC	FR SEARCH CUE	FR SEARCH REV
TEND*[1]	I	IC601 9pin	H	H	H	H	H	H	H	H	H	H	H	H
C·PAUSE*[2]	I	IC601 1pin	H	H	H	H	H	H	H	H	H	H	H	H
TOP/END	O	IC601 3pin	L	L	H	L	L	L	H	L	L	L	L	H

*1 "L" at tape end.

*2 Camera pause signal.

SYSTEM CONTROL CIRCUIT AND REEL MOTOR CONTROL CIRCUIT INTERFACE

SIGNAL	I/O	Pin No.	EJECTED	LOADING	THREADING	STOP	UN-THREADING	UN-LOADING	FF	REW	PB	PB·PAUSE	PICTURE SEARCH		REC	REC·PAUSE	TIMER REC	FR SEARCH	
													CUE	REV				CUE	REV
REEL FG	I	IC601 12pin																	
REEL LOW	O	IC601 58pin	L	L	H	L	H	L	L	L	H	H	L	L	H	H	H	H	H
REEL FWD	O	IC601 59pin	H	H	H	H	L	H	H	L	H	H	H	L	H	H	H	H	L
REEL STOP	O	IC601 60pin	H	H	L	H	L	H	L	L	L	H	L	L	L	H	L	L	L
FF/REW	O	IC601 61pin	L	L	L	L	L	L	H	H	L	L	L	L	L	L	L	H	H
REEL CUE/REV	O	IC601 43pin	L	L	L	L	L	L	L	L	L	L	H	H	L	L	L	L	L
PINCH S	O	IC601 23pin	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
TOP/END	O	IC601 3pin	L	L	L	L	L	L	L	H	L	L	L	H	L	L	L	L	H
UNLOAD	O	IC601 6pin	H	H	H	H	L	L	H	H	H	H	H	H	H	H	H	H	H

SYSTEM CONTROL CIRCUIT AND VIDEO CIRCUIT INTERFACE

SIGNAL	I/O	Pin No.	STOP (E-E)	FF	REW	PB	PB·PAUSE	PICTURE SEARCH		REC	REC·PAUSE	TIMER REC	FR SEARCH	
								CUE	REV				CUE	REV
V MUTE	O	IC601 56pin	L	L	L	L	L	L	L	L	L	L	L	L
MC	O	IC601 57pin	L	L	L	L	H	H	H	L	L	L	H	H
REC·PAUSE	O	IC601 53pin	H	H	H	H	H	H	H	L	H	L	H	H
PB + DUB	O	IC601 52pin	H	H	H	L	L	L	L	H	H	H	L	L

SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT IN

SIGNAL	I/O	Pin No.	STOP	FF
DRUM ROT	I	IC601 11pin	H	L
CAP ROT	I	IC601 10pin	L	L
VD/CTL	I	IC601 29pin		CTL
DRUM STOP	O	IC601 50pin	H	L
CAP STOP	O	IC601 51pin	H	H
PB + DUB	O	IC601 52pin	H	H
REC·PAUSE	O	IC601 53pin	H	H
CUE/REV	O	IC601 54pin	L	L
CAP FWD	O	IC601 55pin	H	H
194 RESET*1	O	IC601 27pin	H	H

*1 Reset signal for CX194.

SYSTEM CONTROL CIRCUIT AND AUDIO CIRCUIT IN

SIGNAL	I/O	Pin No.	STOP (E-E)	FF
A MUTE	O	IC601 7pin	L	L
B CONT	O	IC601 8pin	H	H
REC·PAUSE	O	IC601 53pin	H	H
PB + DUB	O	IC601 52pin	H	H

PB· AUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
	CUE	REV				CUE	REV
H	L	L	H	H	H	H	H
H	H	L	H	H	H	H	L
H	L	L	L	H	L	L	L
L	L	L	L	L	L	H	H
L	H	H	L	L	L	L	L
H	H	H	H	H	H	H	H
L	L	H	L	L	L	L	H
H	H	H	H	H	H	H	H

MER EC	FR SEARCH	
	CUE	REV
L	L	L
L	H	H
L	H	H
H	L	L

SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT INTERFACE

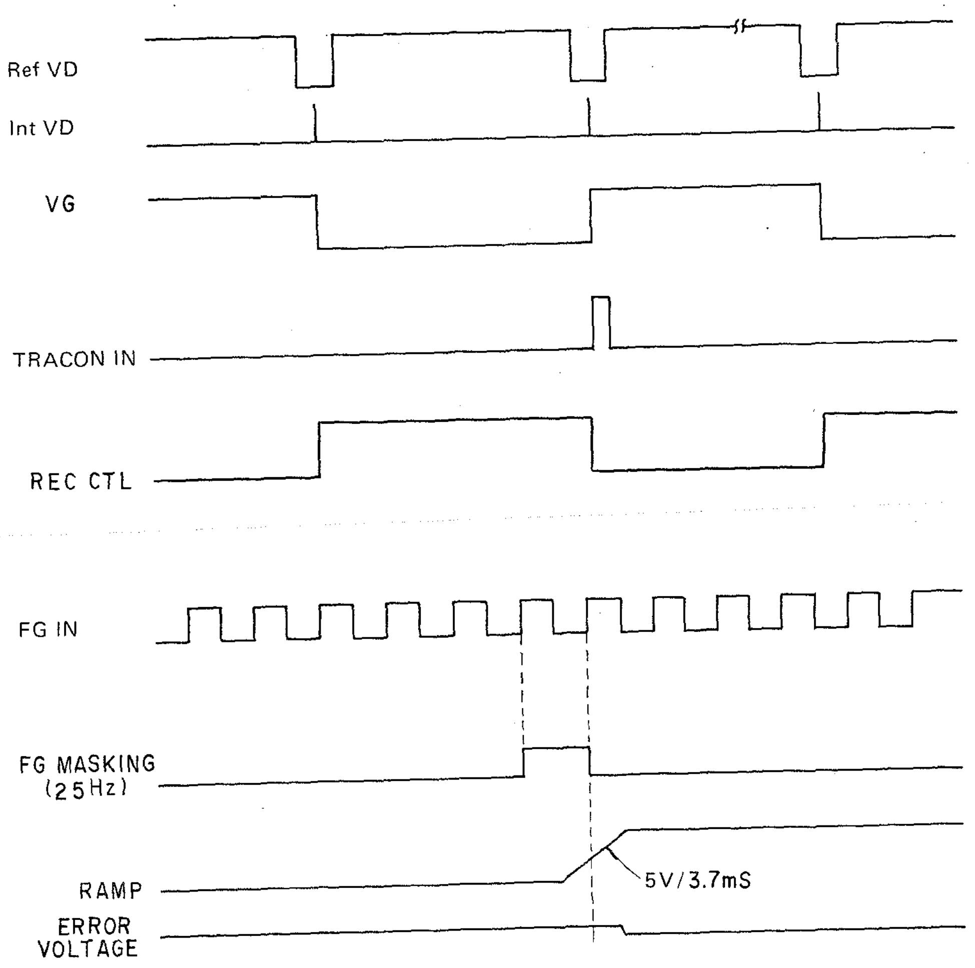
SIGNAL	I/O	Pin No.	STOP	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
MODE								CUE	REV				CUE	REV
DRUM ROT	I	IC601 11pin	H	L	L	L	L	L	L	L	L	L	L	L
CAP ROT	I	IC601 10pin	L	L	L	H	H	H	H	H	H	H	L	L
VD/CTL	I	IC601 29pin		CTL	CTL	CTL		CTL	CTL	VD		VD	CTL	CTL
DRUM STOP	O	IC601 50pin	H	L	L	L	L	L	L	L	L	L	L	L
CAP STOP	O	IC601 51pin	H	H	H	L	L	L	L	L	L	L	H	H
PB + DUB	O	IC601 52pin	H	H	H	L	L	L	L	H	H	H	L	L
REC·PAUSE	O	IC601 53pin	H	H	H	H	H	H	H	L	H	L	H	H
CUE/REV	O	IC601 54pin	L	L	L	L	L	H	H	L	L	L	L	L
CAP FWD	O	IC601 55pin	H	H	H	H	H	H	L	H	H	H	H	H
194 RESET*[1]	O	IC601 27pin	H	H	H	H	H	H	H	H	H	H	H	H

*1 Reset signal for CX194.

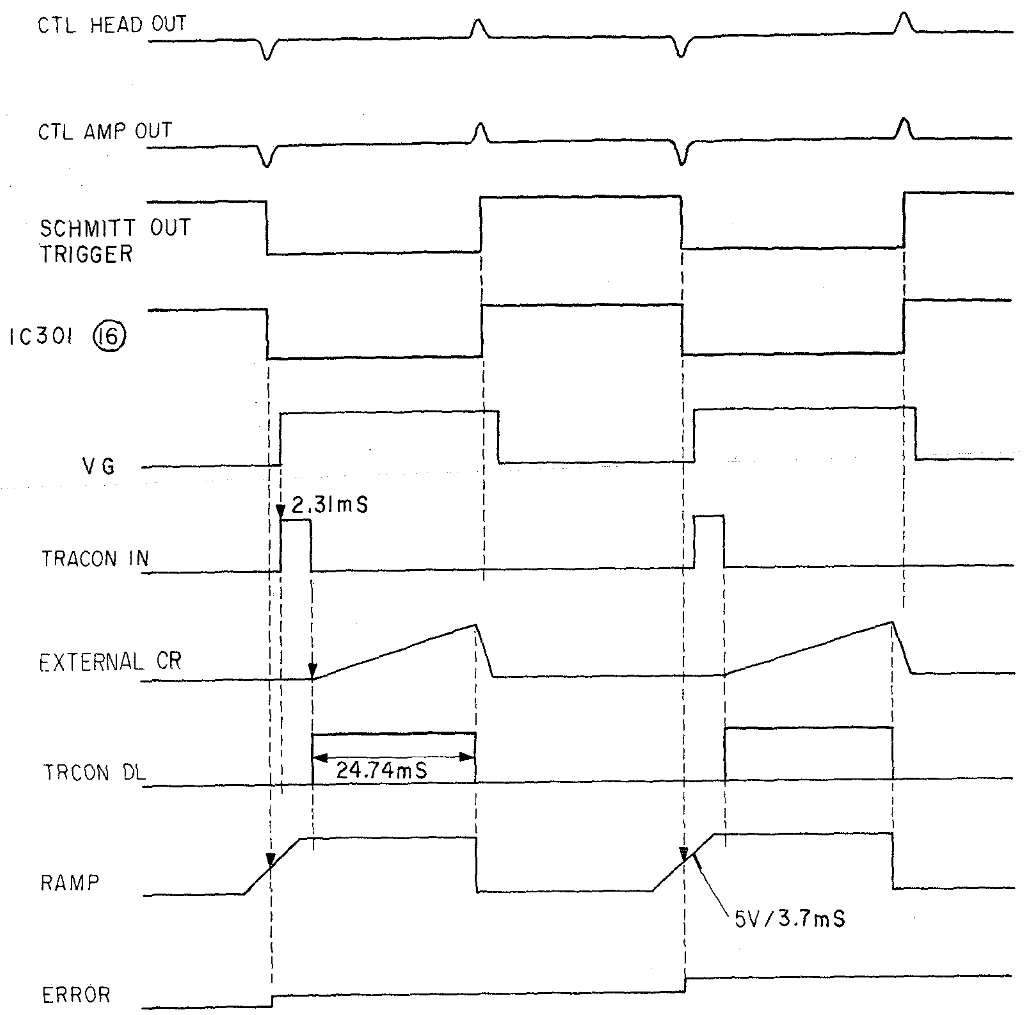
SYSTEM CONTROL CIRCUIT AND AUDIO CIRCUIT INTERFACE

SIGNAL	I/O	Pin No.	STOP (E-E)	FF	REW	PB	PB· PAUSE	PICTURE SEARCH		REC	REC· PAUSE	TIMER REC	FR SEARCH	
MODE								CUE	REV				CUE	REV
A MUTE	O	IC601 7pin	L	L	L	L	H	H	H	L	L	L	H	H
B CONT	O	IC601 8pin	H	H	H	H	H	H	H	L	H	L	H	H
REC·PAUSE	O	IC601 53pin	H	H	H	H	H	H	H	L	H	L	H	H
PB + DUB	O	IC601 52pin	H	H	H	L	L	L	L	H	H	H	L	L

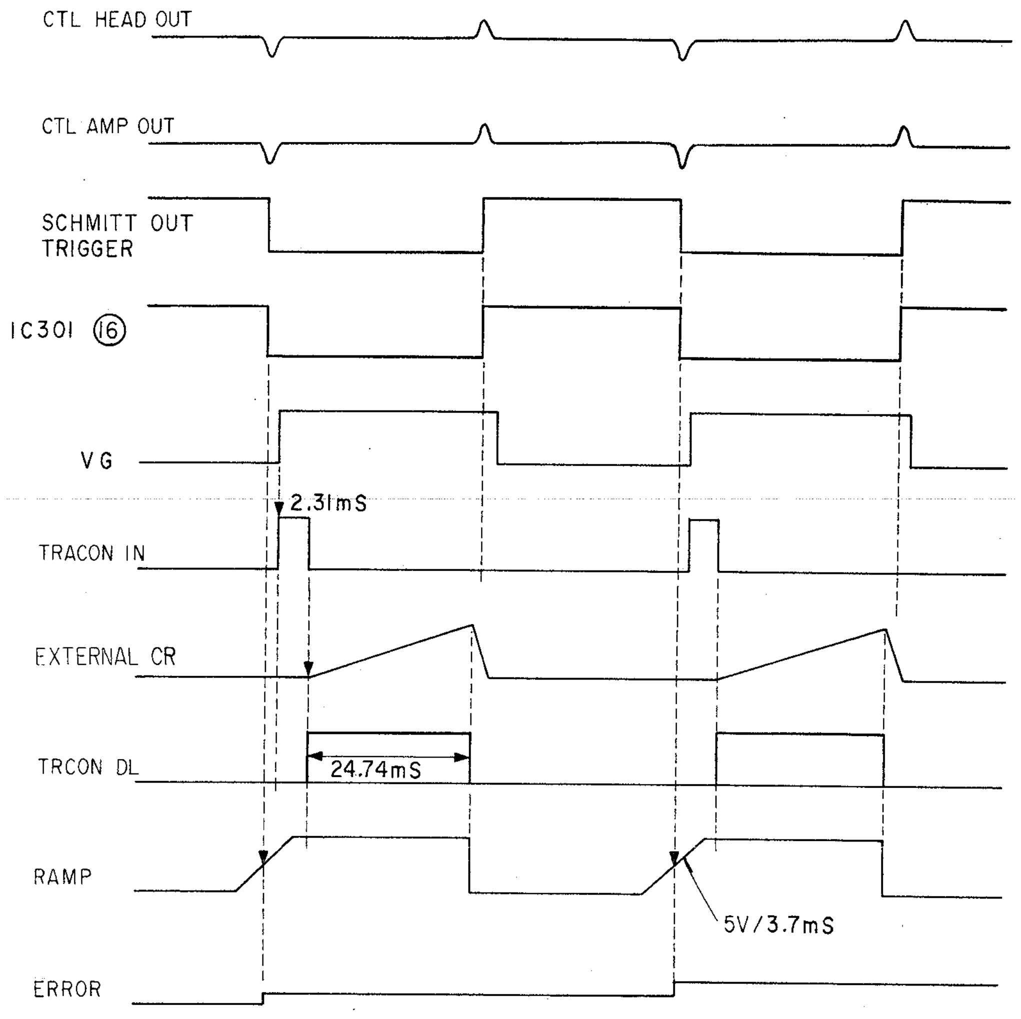
CAPSTAN PHASE SYSTEM TIMING CHART (REC)


Ref VD
Int VD
VG
TRACON IN
REC CTL
FG IN
FG MASKING (25Hz)
RAMP
5V/3.7mS
ERROR VOLTAGE

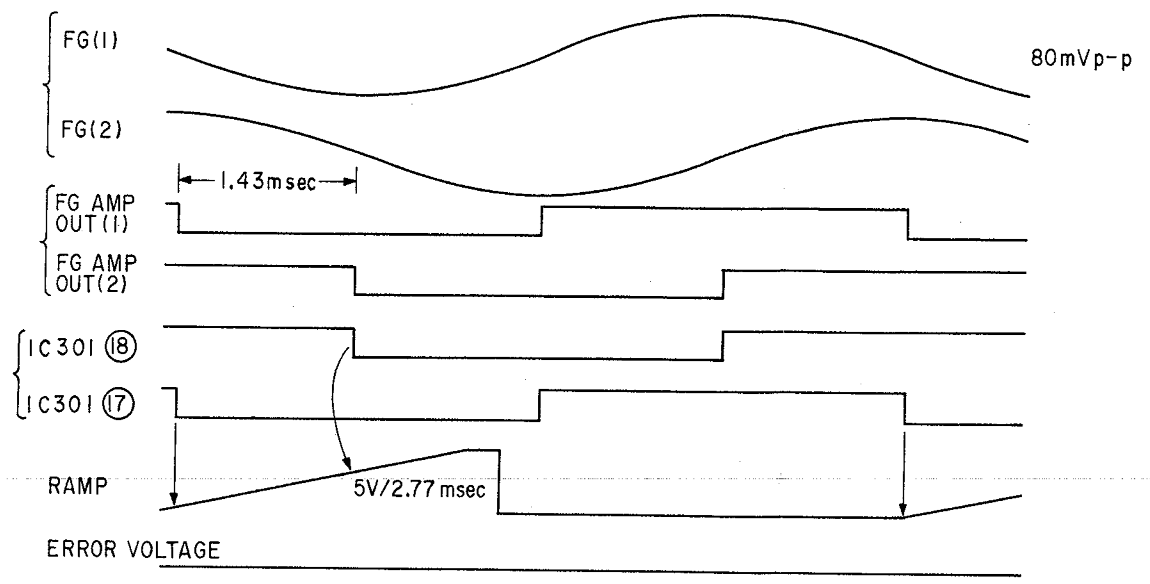
CAPSTAN PHASE SYSTEM TIMING CHART (PB)


CTL HEAD OUT
CTL AMP OUT
SCHMITT OUT
TRIGGER
IC301 ⑯
VG
2.31mS
TRACON IN
EXTERNAL CR
TRCON DL
24.74mS
RAMP
5V/3.7mS
ERROR

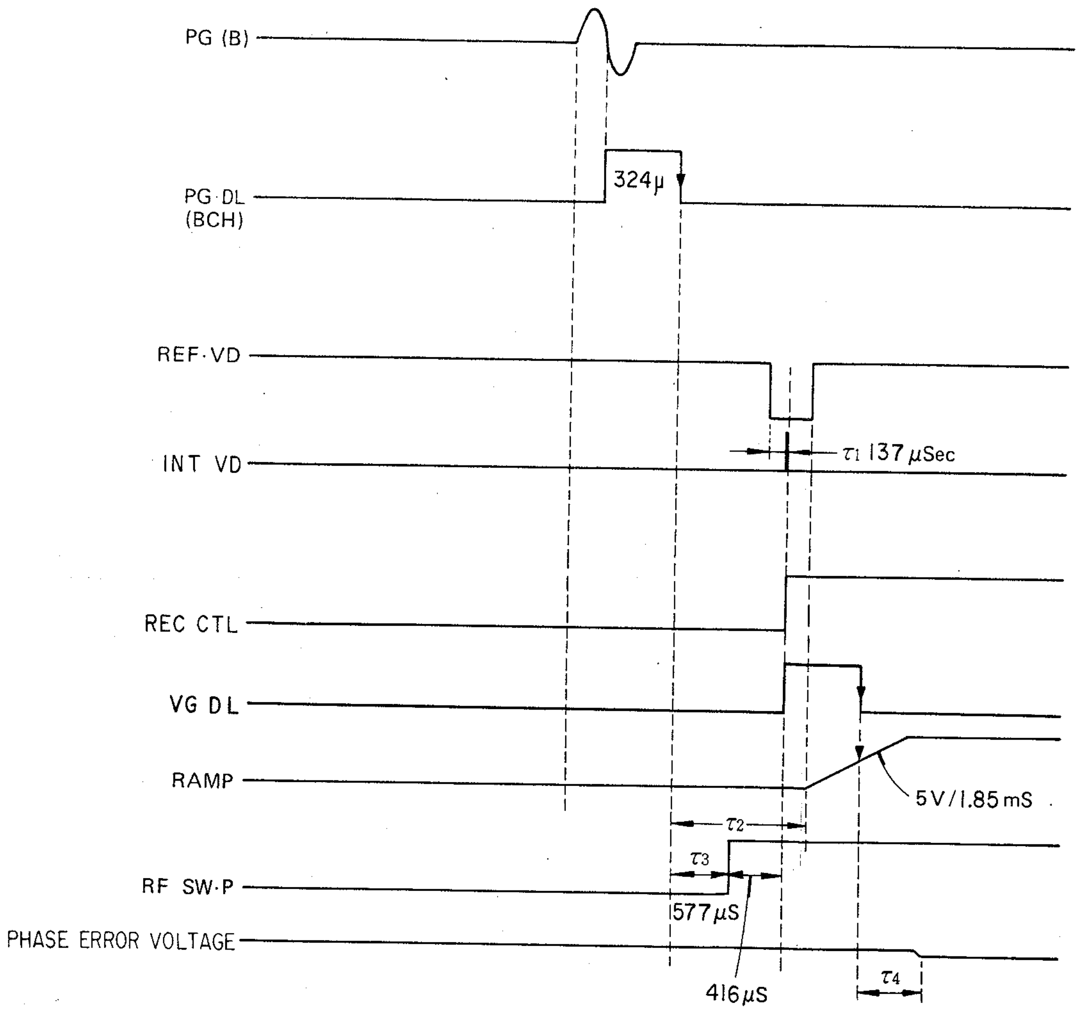
CAPSTAN PHASE SYSTEM TIMING CHART (PB)


CTL HEAD OUT
CTL AMP OUT
SCHMITT TRIGGER OUT
IC301 ⑯
VG
2.31mS
TRACON IN
EXTERNAL CR
TRCON DL
24.74mS
RAMP
5V/3.7mS
ERROR

CAPSTAN SPEED SYSTEM TIMING CHART

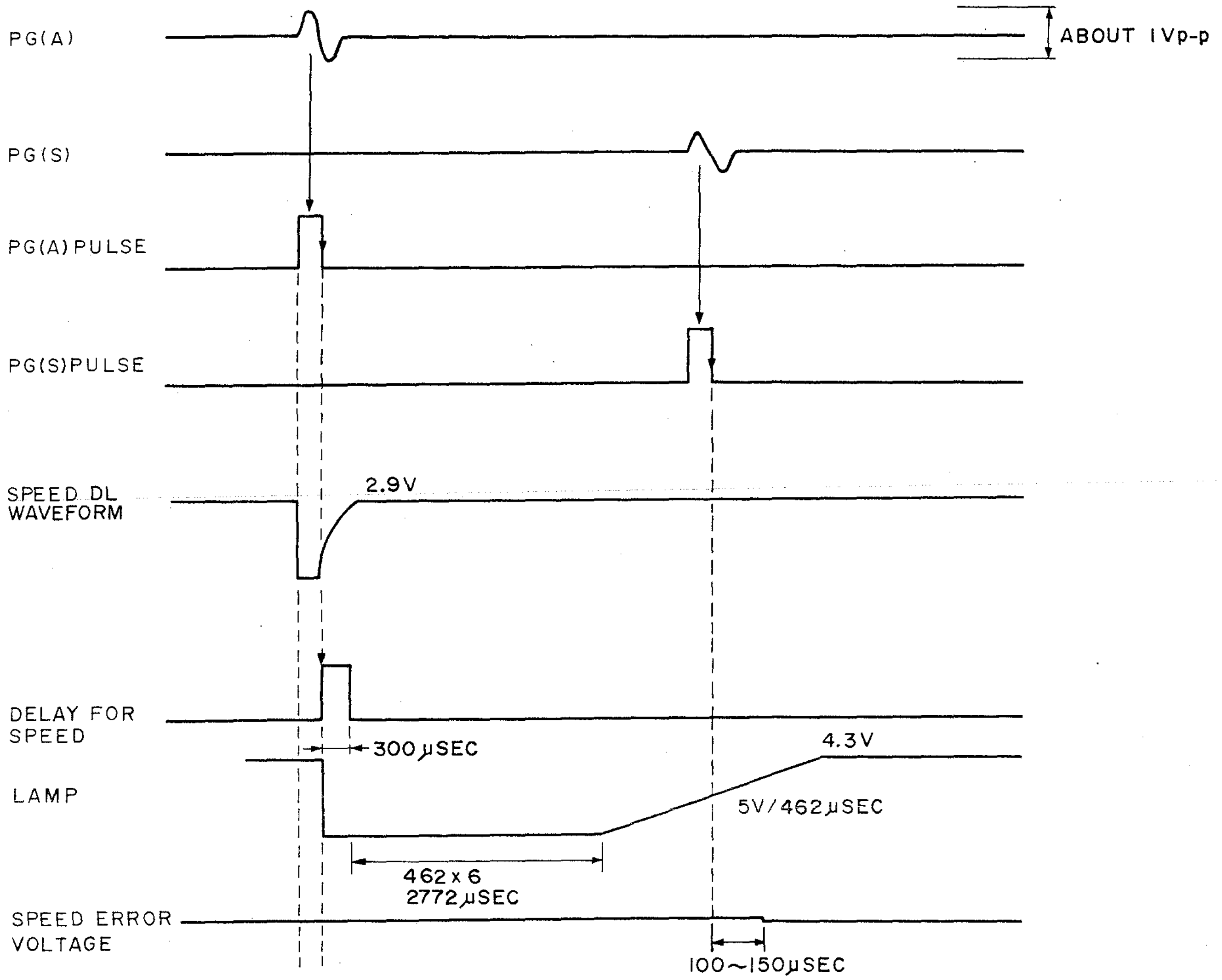

FG(1)
FG(2)
80mVp-p
1.43msec
FG AMP OUT(1)
FG AMP OUT(2)
IC301 ⑱
IC301 ⑰
RAMP
5V/2.77msec
ERROR VOLTAGE

DRUM PHASE SYSTEM TIMING CHART

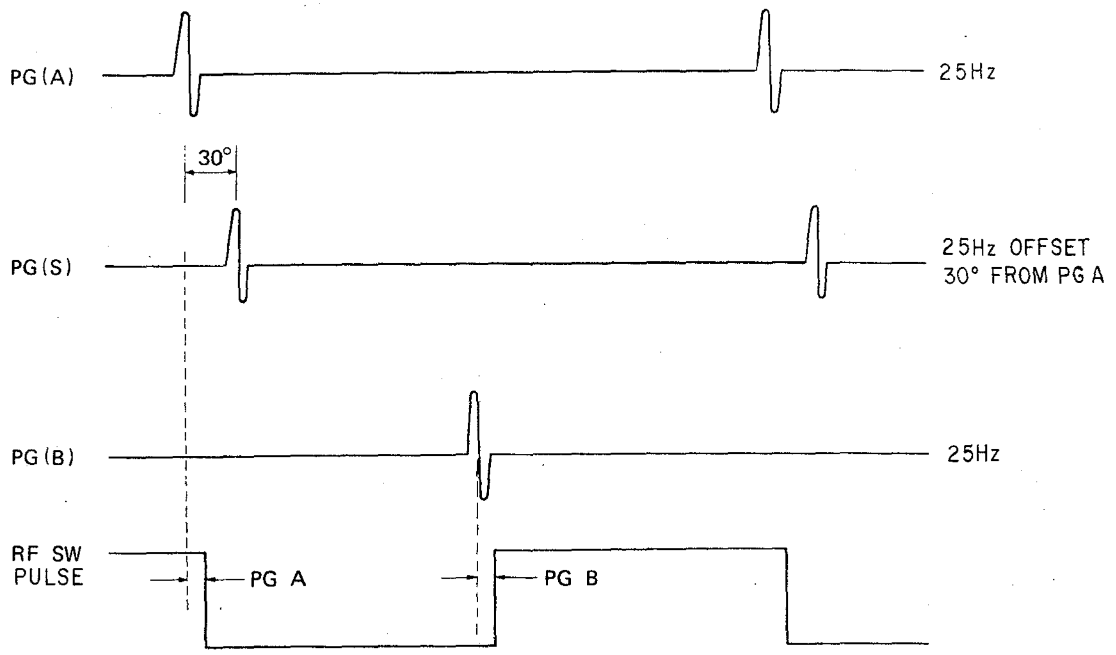

PG (B)
324μ
PG·DL (BCH)
REF·VD
INT VD
τ1 137μSec
REC CTL
VG DL
RAMP
5V/1.85mS
τ2
τ3
RF SW·P
577μS
416μS
PHASE ERROR VOLTAGE
τ4

τ1 REF VD DETECTION DELAY TIME
τ2,3 DIGITAL DL
τ4 DATA EXCHANGE TIME

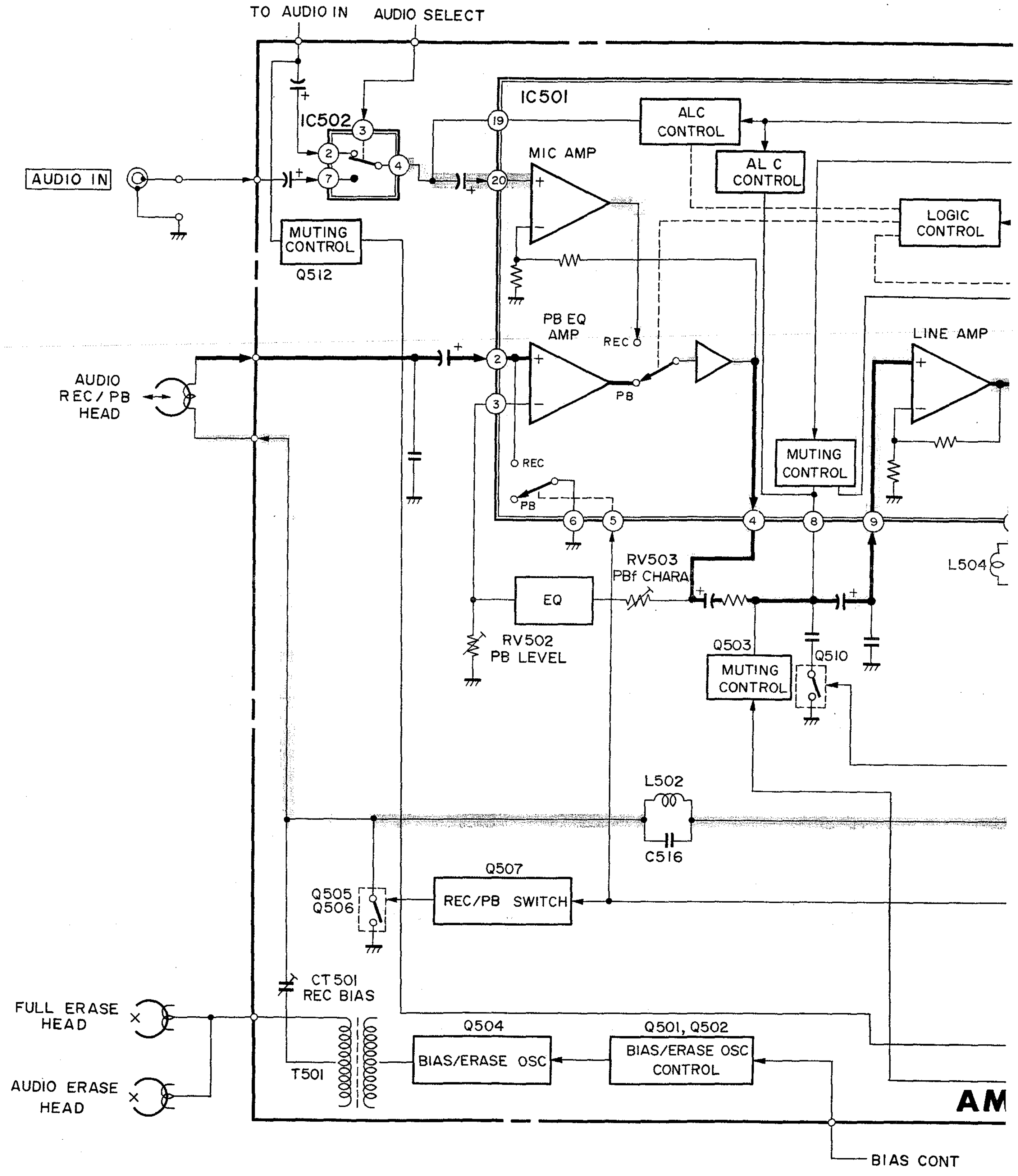
DRUM SPEED SYSTEM TIMING CHART



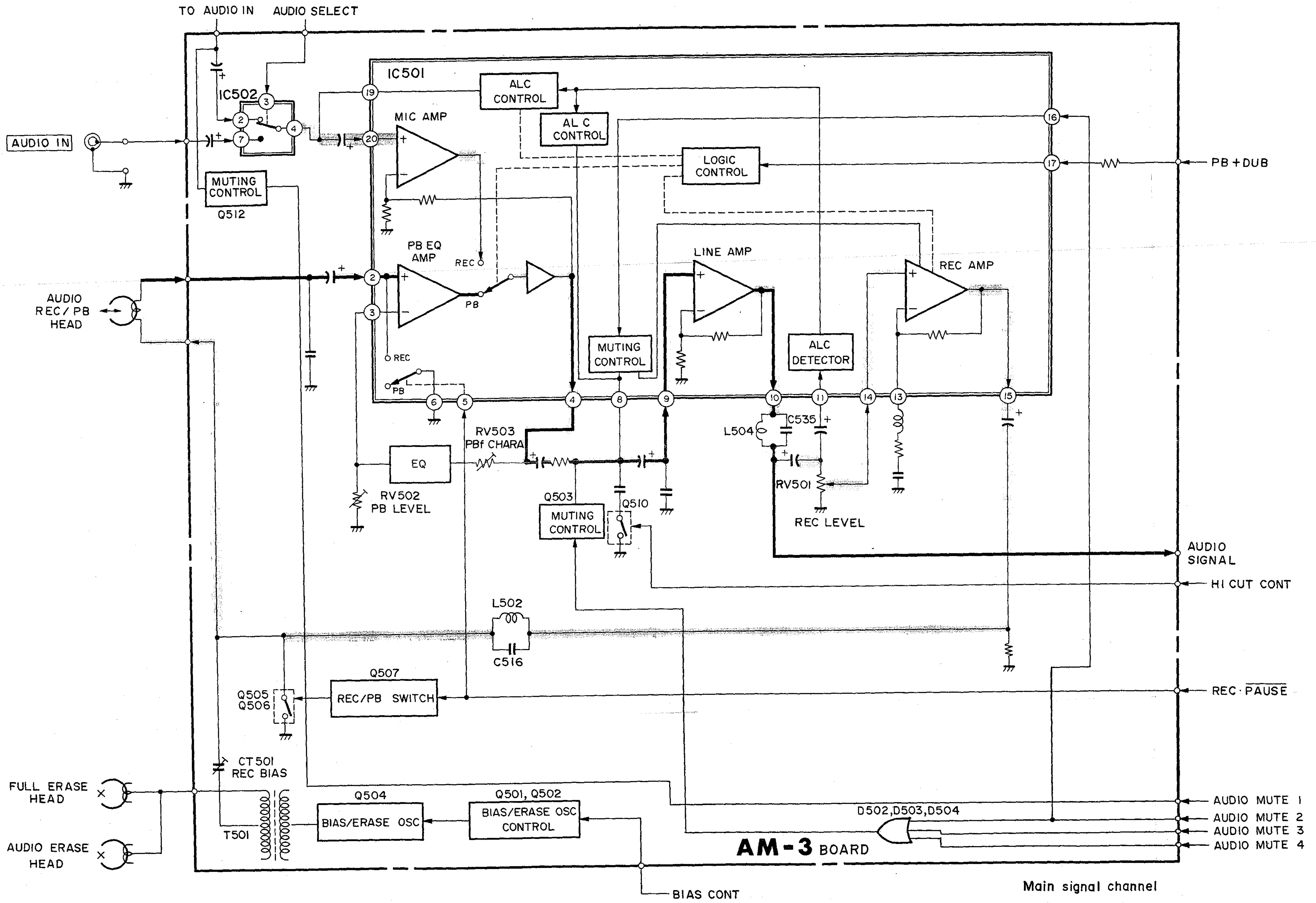
PG SIGNAL TIMING CHART



AUDIO BLOCK DIAGRAM


TO AUDIO IN
AUDIO SELECT
IC501
IC502
ALC CONTROL
AL C CONTROL
MIC AMP
LOGIC CONTROL
AUDIO IN
MUTING CONTROL
Q512
PB EQ AMP
REC
PB
LINE AMP
AUDIO REC/PB HEAD
REC
PB
MUTING CONTROL
RV503
PBf CHARA
L504
EQ
RV502
PB LEVEL
Q503
MUTING CONTROL
Q510
L502
C516
Q507
Q505
Q506
REC/PB SWITCH
CT501
REC BIAS
FULL ERASE HEAD
AUDIO ERASE HEAD
T501
Q504
BIAS/ERASE OSC
Q501, Q502
BIAS/ERASE OSC CONTROL
AM
BIAS CONT

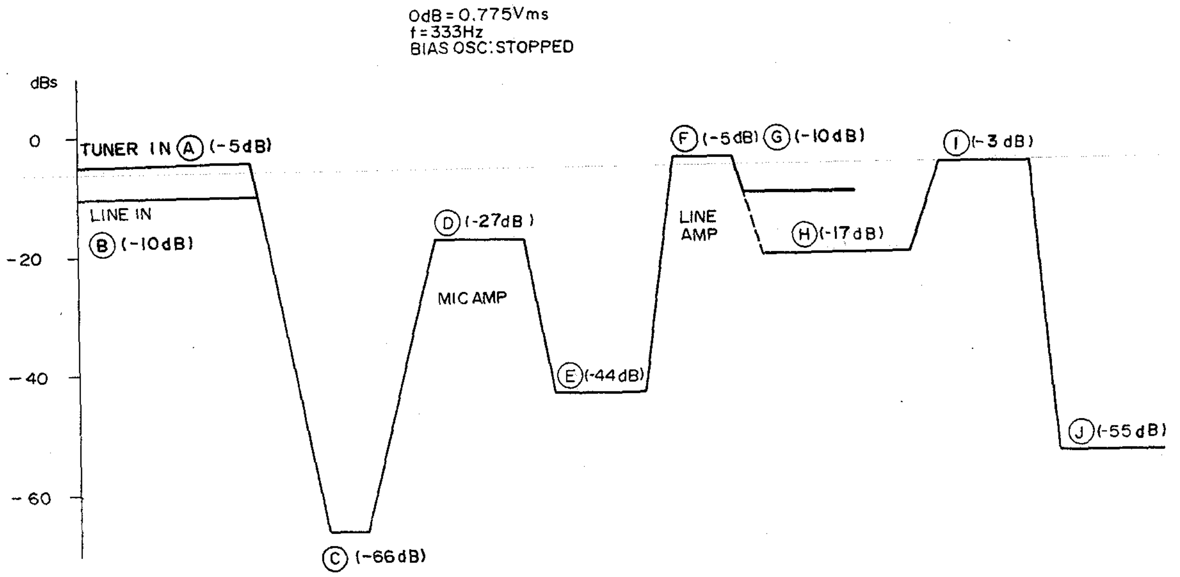
AUDIO BLOCK DIAGRAM

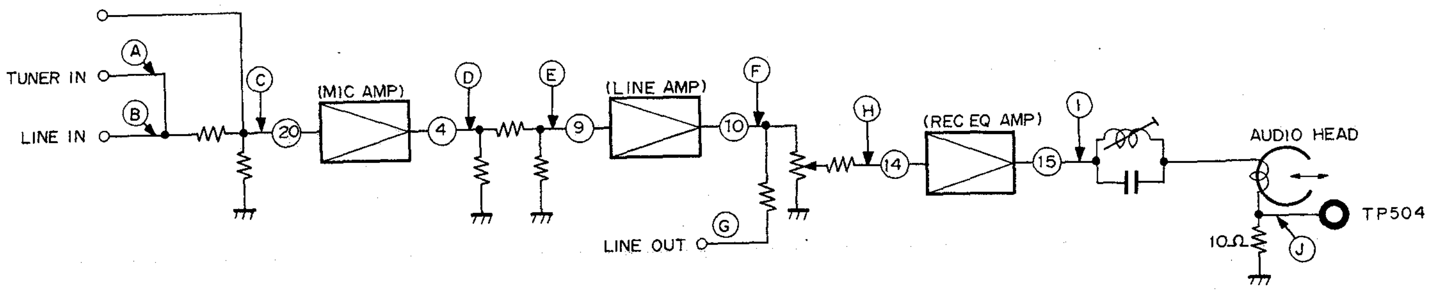

TO AUDIO IN
AUDIO SELECT
IC501
IC502
ALC CONTROL
AL C CONTROL
MIC AMP
LOGIC CONTROL
AUDIO IN
MUTING CONTROL
Q512
PB EQ AMP
REC
PB
LINE AMP
REC AMP
AUDIO REC/PB HEAD
MUTING CONTROL
ALC DETECTOR
REC
PB
RV503 PBf CHARA
L504
C535
EQ
RV502 PB LEVEL
RV501
Q503
Q510
MUTING CONTROL
REC LEVEL
AUDIO SIGNAL
HI CUT CONT
L502
C516
Q507
Q505 Q506
REC/PB SWITCH
REC·PAUSE
PB + DUB
CT501 REC BIAS
FULL ERASE HEAD
AUDIO ERASE HEAD
T501
Q504
BIAS/ERASE OSC
Q501, Q502
BIAS/ERASE OSC CONTROL
D502,D503,D504
AM-3 BOARD
AUDIO MUTE 1
AUDIO MUTE 2
AUDIO MUTE 3
AUDIO MUTE 4
BIAS CONT

Main signal channel
▨ :RECORD
→ :PLAYBACK

AUDIO LEVEL DIAGRAM (REC)

REC MODE

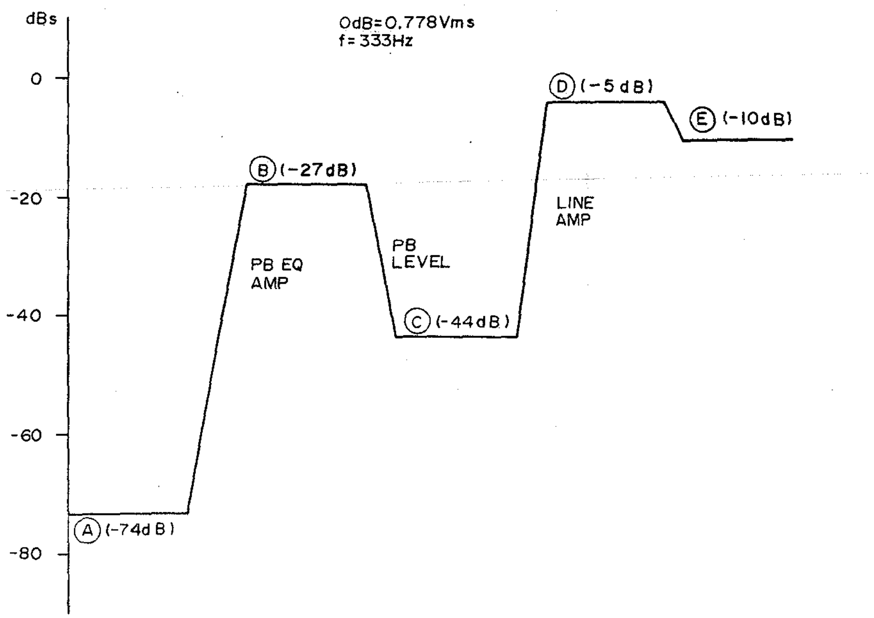


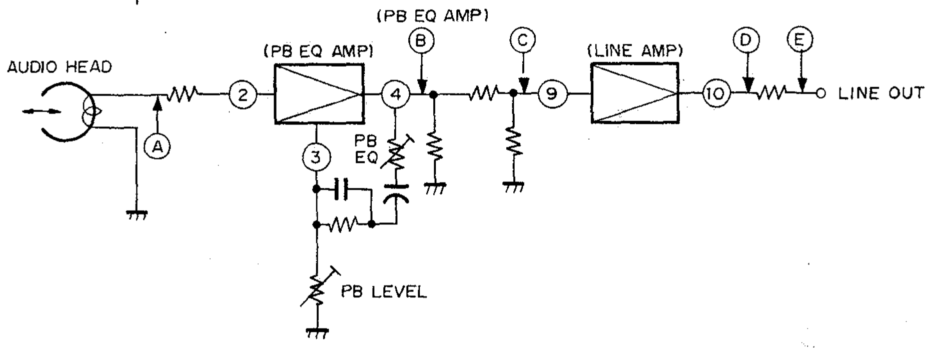


TUNER IN
LINE IN
Ⓐ
Ⓑ
Ⓒ
(MIC AMP)
⑳
④
Ⓓ
Ⓔ
⑨
(LINE AMP)
⑩
Ⓕ
Ⓖ
LINE OUT
Ⓗ
⑭
(REC EQ AMP)
⑮
Ⓘ
AUDIO HEAD
TP504
10Ω
Ⓙ

AUDIO LEVEL DIAGRAM (PB)

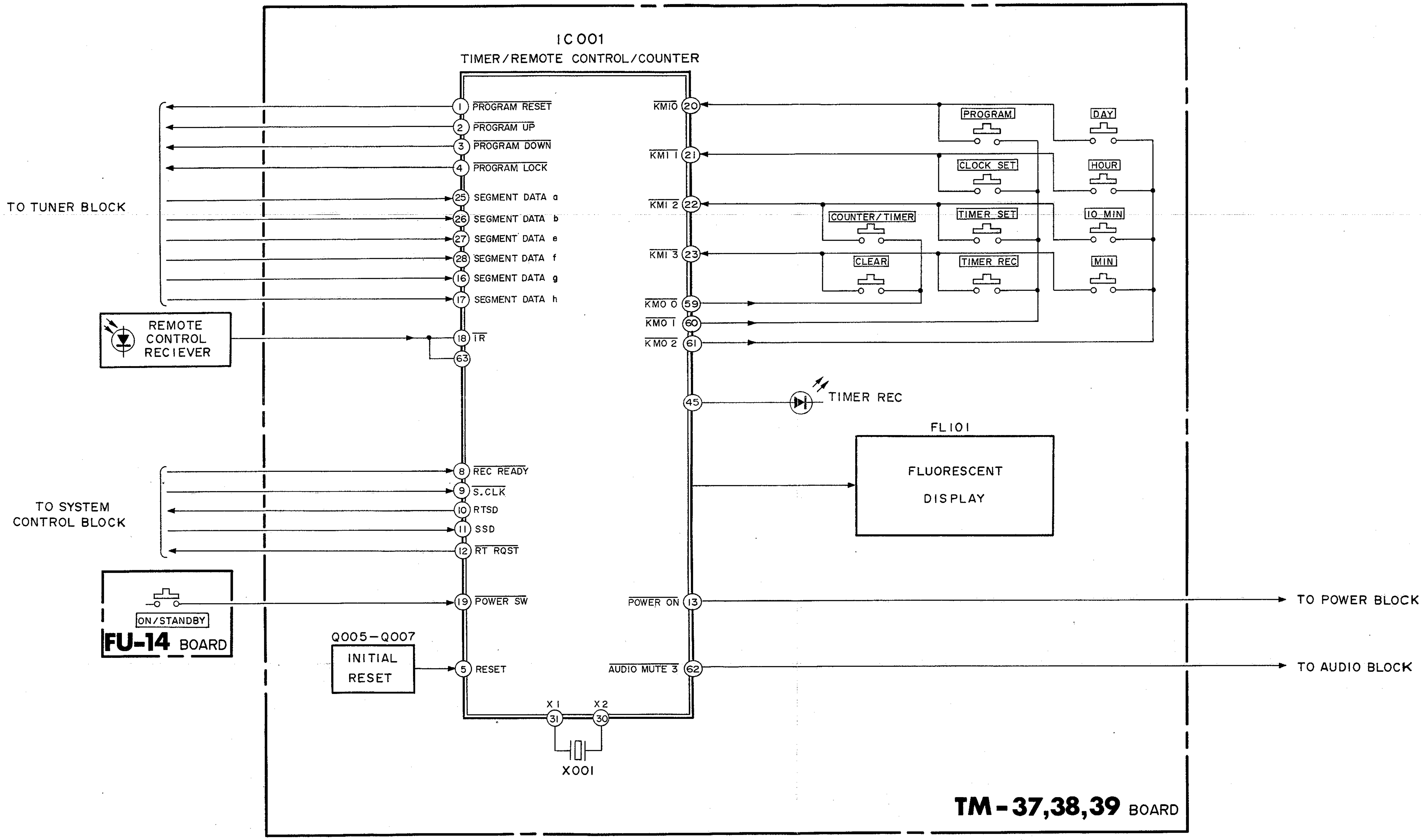
PB MODE



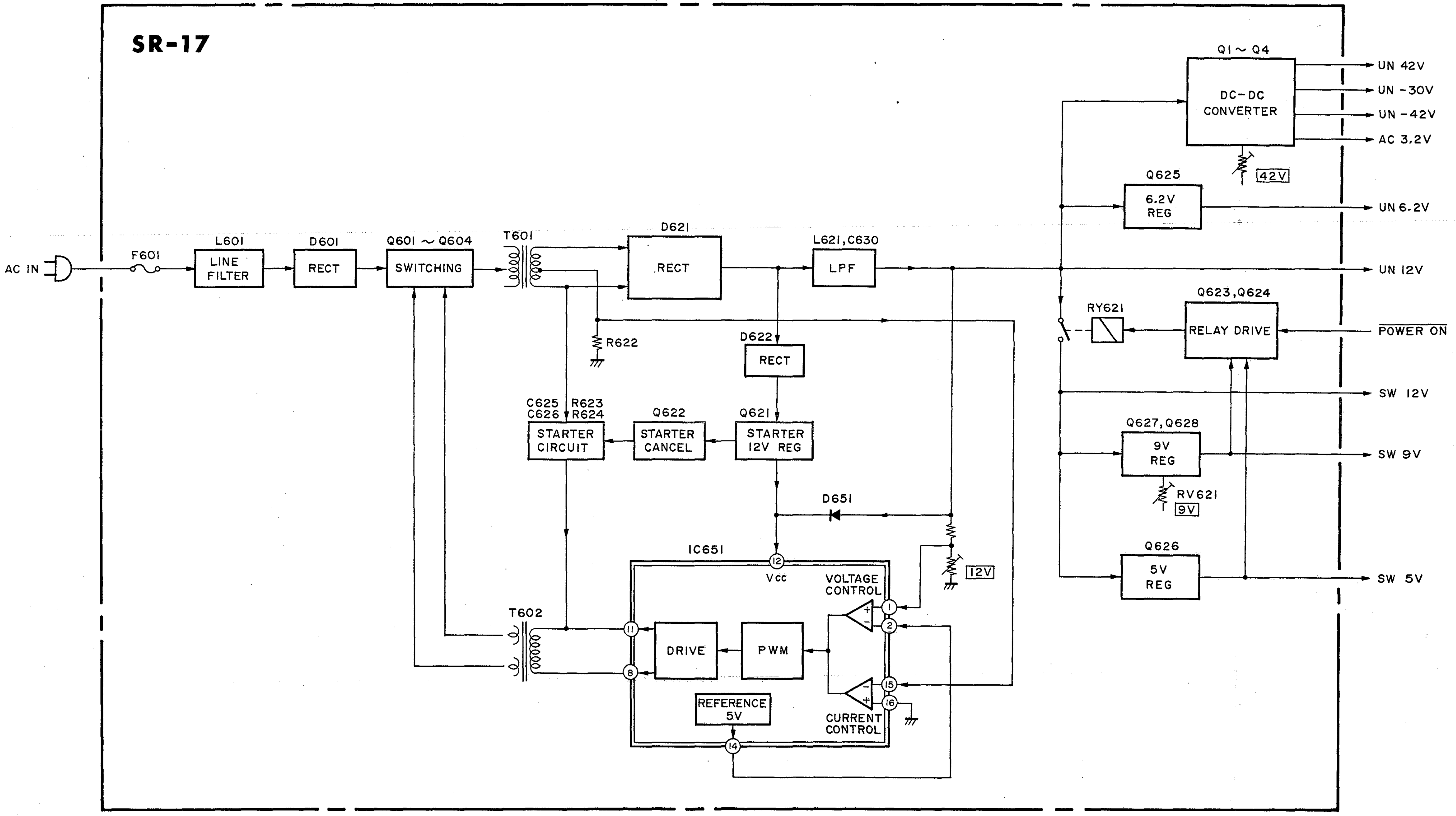


AUDIO HEAD
Ⓐ
②
(PB EQ AMP)
(PB EQ AMP)
Ⓑ
④
③
PB EQ
PB LEVEL
Ⓒ
⑨
(LINE AMP)
⑩
Ⓓ
Ⓔ
LINE OUT

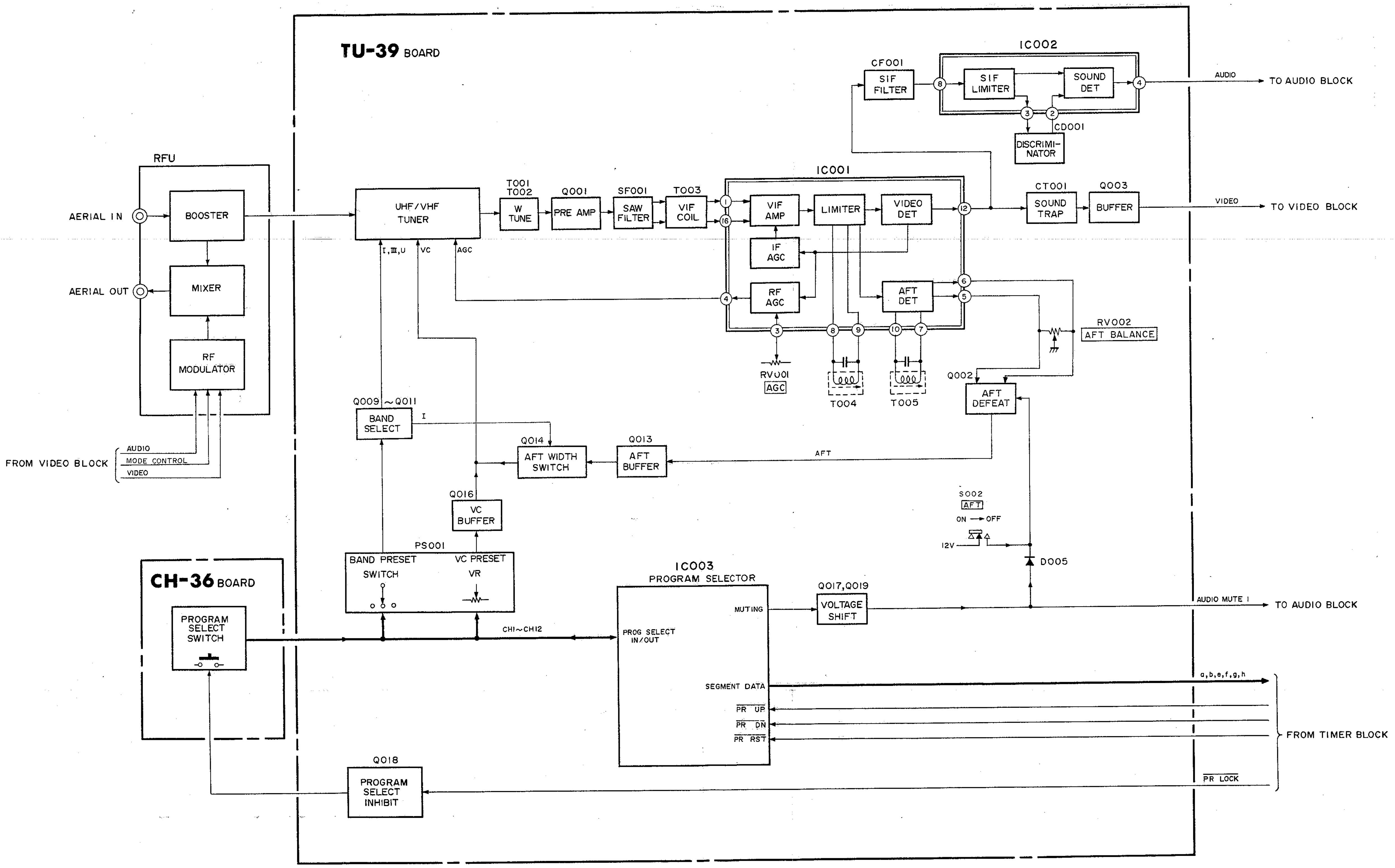
TIMER BLOCK DIAGRAM


IC001
TIMER/REMOTE CONTROL/COUNTER
1 PROGRAM RESET
2 PROGRAM UP
3 PROGRAM DOWN
4 PROGRAM LOCK
25 SEGMENT DATA a
26 SEGMENT DATA b
27 SEGMENT DATA e
28 SEGMENT DATA f
16 SEGMENT DATA g
17 SEGMENT DATA h
TO TUNER BLOCK
REMOTE CONTROL RECIEVER
18 IR
63
8 REC READY
9 S.CLK
10 RTSD
11 SSD
12 RT RQST
TO SYSTEM CONTROL BLOCK
ON/STANDBY
FU-14 BOARD
19 POWER SW
Q005–Q007
INITIAL RESET
5 RESET
X1 31
X2 30
X001
KMI0 20
KMI 1 21
KMI 2 22
KMI 3 23
KMO 0 59
KMO 1 60
KMO 2 61
PROGRAM
DAY
CLOCK SET
HOUR
COUNTER/TIMER
TIMER SET
10 MIN
CLEAR
TIMER REC
MIN
45
TIMER REC
FL101
FLUORESCENT DISPLAY
POWER ON 13
TO POWER BLOCK
AUDIO MUTE 3 62
TO AUDIO BLOCK
TM-37,38,39 BOARD

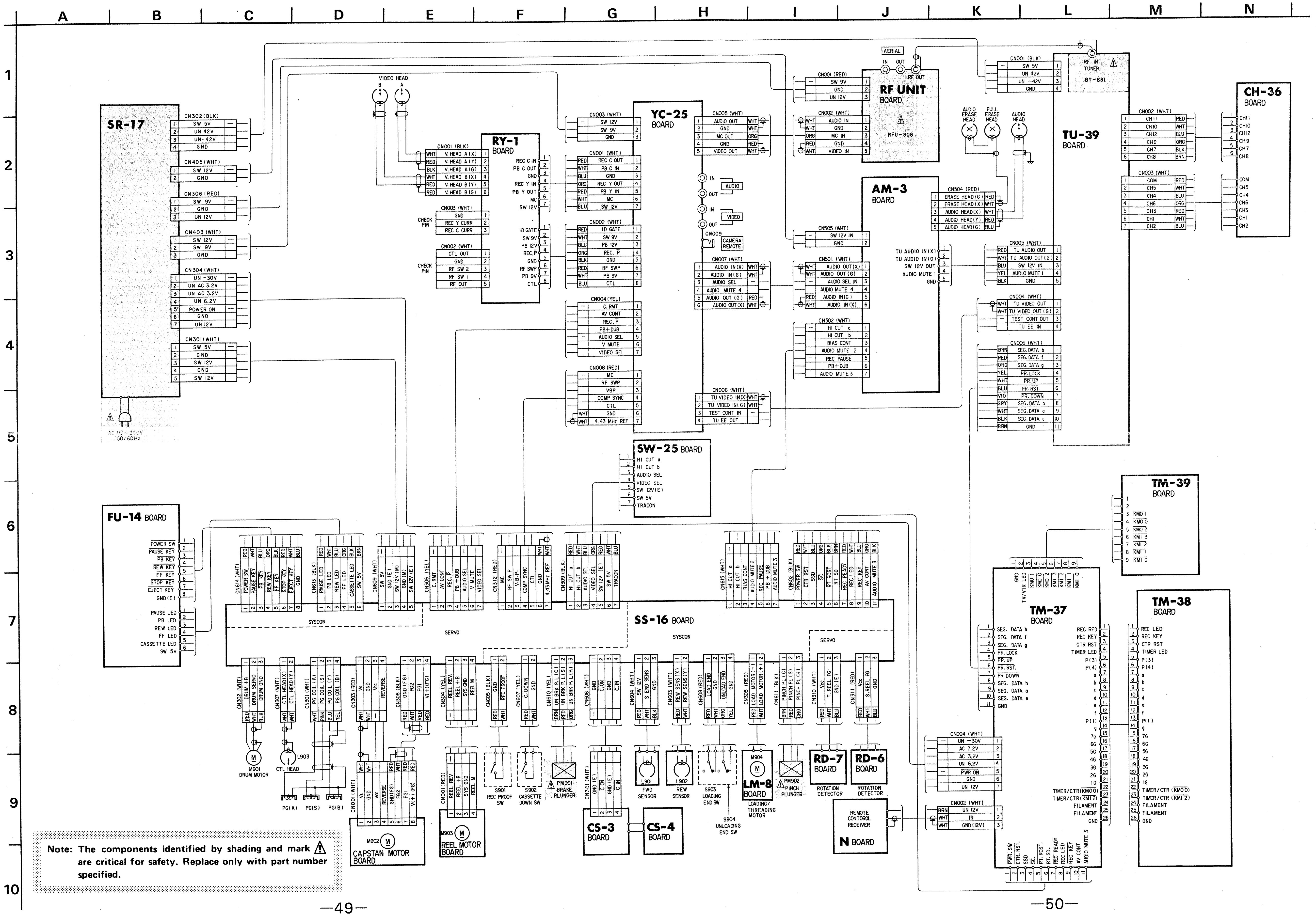
POWER SUPPLY BLOCK DIAGRAM


SR-17
AC IN
F601
L601
LINE FILTER
D601
RECT
Q601 ~ Q604
SWITCHING
T601
D621
RECT
L621, C630
LPF
R622
D622
RECT
C625
C626
R623
R624
STARTER CIRCUIT
Q622
STARTER CANCEL
Q621
STARTER 12V REG
D651
12V
IC651
12
Vcc
VOLTAGE CONTROL
1
2
T602
11
8
DRIVE
PWM
15
16
REFERENCE 5V
14
CURRENT CONTROL
Q1 ~ Q4
DC-DC CONVERTER
42V
UN 42V
UN -30V
UN -42V
AC 3.2V
Q625
6.2V REG
UN 6.2V
UN 12V
RY621
Q623, Q624
RELAY DRIVE
POWER ON
SW 12V
Q627, Q628
9V REG
RV621
9V
SW 9V
Q626
5V REG
SW 5V

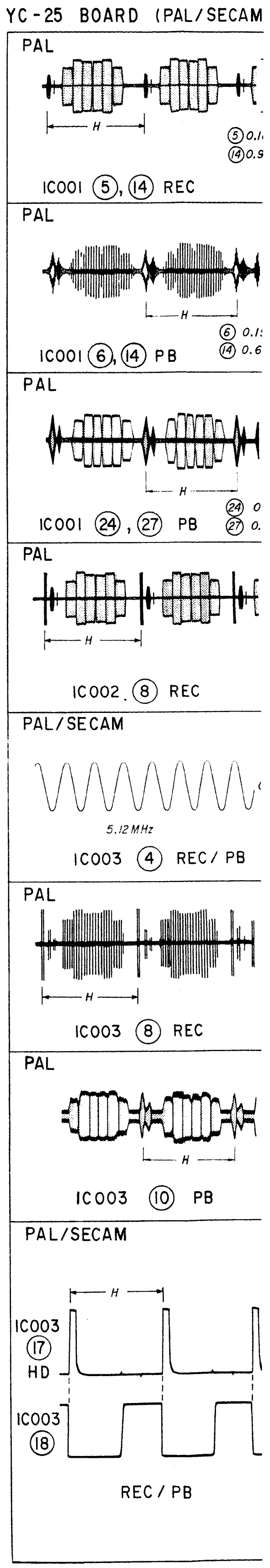
TUNER BLOCK DIAGRAM


TU-39 BOARD
RFU
AERIAL IN
BOOSTER
AERIAL OUT
MIXER
RF MODULATOR
FROM VIDEO BLOCK
AUDIO
MODE CONTROL
VIDEO
UHF/VHF TUNER
I, III, U
VC
AGC
T001 T002
W TUNE
Q001
PRE AMP
SF001
SAW FILTER
T003
VIF COIL
IC001
VIF AMP
LIMITER
VIDEO DET
IF AGC
RF AGC
AFT DET
RV001
AGC
T004
T005
CF001
SIF FILTER
IC002
SIF LIMITER
SOUND DET
CD001
DISCRIMI-NATOR
AUDIO
TO AUDIO BLOCK
CT001
SOUND TRAP
Q003
BUFFER
VIDEO
TO VIDEO BLOCK
RV002
AFT BALANCE
Q002
AFT DEFEAT
Q009 ~ Q011
BAND SELECT
I
Q014
AFT WIDTH SWITCH
Q013
AFT BUFFER
AFT
Q016
VC BUFFER
PS001
BAND PRESET SWITCH
VC PRESET VR
S002
AFT
ON → OFF
12V
D005
CH-36 BOARD
PROGRAM SELECT SWITCH
CH1~CH12
IC003
PROGRAM SELECTOR
PROG SELECT IN/OUT
MUTING
Q017, Q019
VOLTAGE SHIFT
AUDIO MUTE I
TO AUDIO BLOCK
SEGMENT DATA
a, b, e, f, g, h
PR UP
PR DN
PR RST
FROM TIMER BLOCK
PR LOCK
Q018
PROGRAM SELECT INHIBIT

FRAME SCHEMATIC DIAGRAM

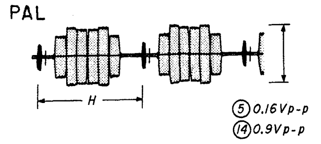

A
B
C
D
E
F
G
H
I
J
K
L
M
N
1
2
3
4
5
6
7
8
9
10
SR-17
RY-1 BOARD
YC-25 BOARD
RF UNIT BOARD
RFU-808
AERIAL
AM-3 BOARD
TU-39 BOARD
BT-881
CH-36 BOARD
SW-25 BOARD
TM-39 BOARD
TM-37 BOARD
TM-38 BOARD
FU-14 BOARD
SS-16 BOARD
SYSCON
SERVO
VIDEO HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
AUDIO HEAD
AC 110~240V 50/60Hz
M901 DRUM MOTOR
CTL HEAD
L903
PG(A)
PG(S)
PG(B)
M902 CAPSTAN MOTOR BOARD
M903 REEL MOTOR BOARD
S901 REC PROOF SW
S902 CASSETTE DOWN SW
PM901 BRAKE PLUNGER
CS-3 BOARD
CS-4 BOARD
L901 FWD SENSOR
L902 REW SENSOR
S903 LOADING END SW
S904 UNLOADING END SW
M904 LM-8 BOARD LOADING/THREADING MOTOR
PM902 PINCH PLUNGER
RD-7 BOARD ROTATION DETECTOR
RD-6 BOARD ROTATION DETECTOR
REMOTE CONTOROL RECEIVER
N BOARD

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



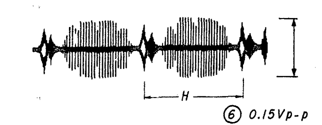
YC-25 BOARD (PAL/SECAM)

PAL



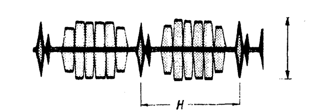
IC001 ⑤, ⑭ REC

PAL



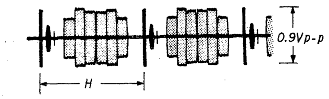
IC001 ⑥, ⑭ PB

PAL



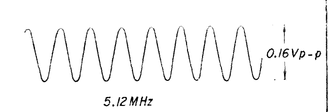
IC001 ㉔, ㉗ PB

PAL



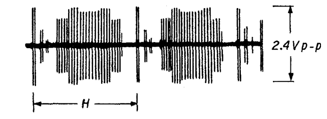
IC002 ⑧ REC

PAL/SECAM



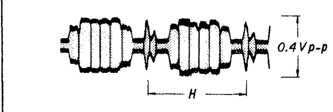
IC003 ④ REC / PB

PAL



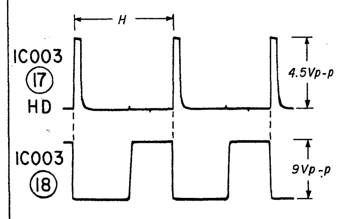
IC003 ⑧ REC

PAL



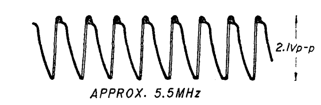
IC003 ⑩ PB

PAL/SECAM



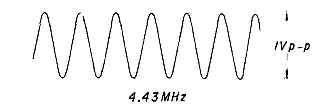
REC / PB

PAL/SECAM



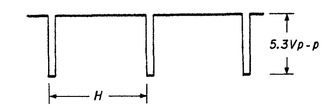
IC003 ⑫ REC / PB

PAL/SECAM



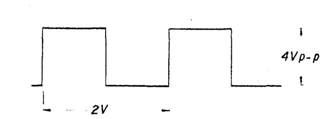
IC004 ⑦ REC / PB

PAL



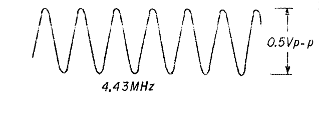
IC005 ⑨ PB

PAL/SECAM



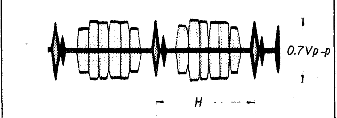
IC005 ⑩ REC / PB

PAL/SECAM



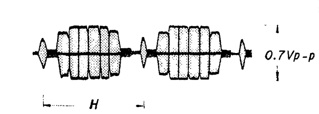
IC006 ⑭ REC / PB

PAL



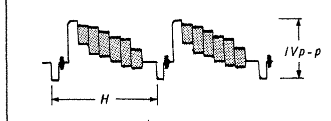
IC009 ①,③ PB

PAL



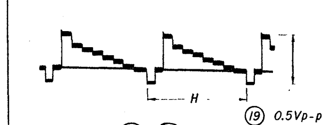
IC009 ⑧ PB

PAL



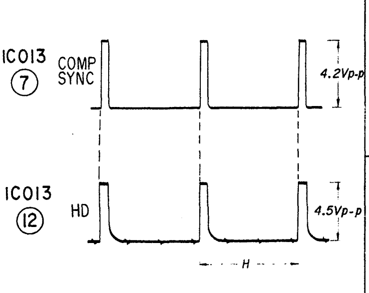
IC013 ⑮ REC

PAL/SECAM



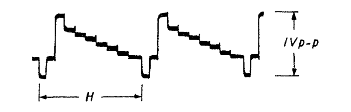
IC013 ⑲, ㉑ PB

PAL/SECAM



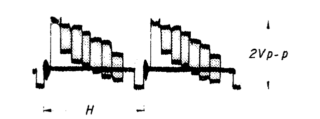
REC / PB

PAL/SECAM



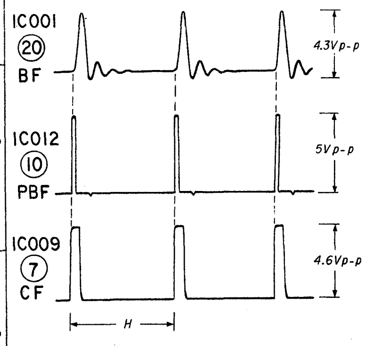
IC014 ⑬ REC

PAL



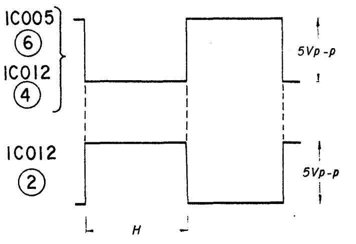
IC014 ㉔ PB

PAL/SECAM



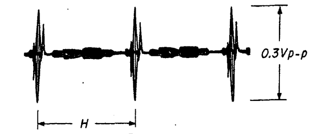
REC / PB

PAL



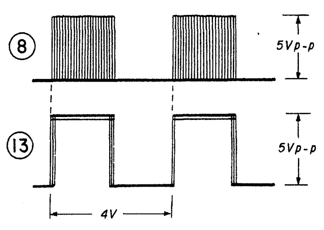
PB · PAUSE

PAL



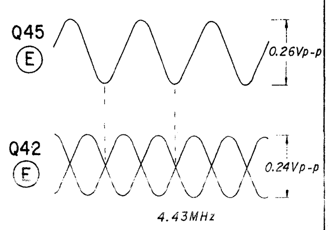
IC010 ⑥ PB · PAUSE

PAL



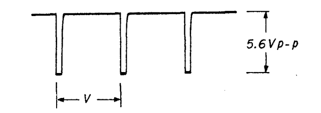
IC011 PB · PAUSE

PAL



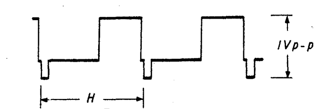
PB · PAUSE

PAL/SECAM



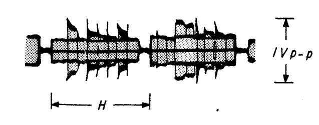
CN008 ③ PB · PAUSE

PAL/SECAM

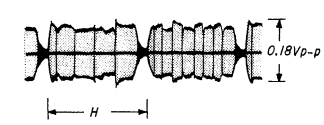


CN005 ⑤ TEST SIGNAL

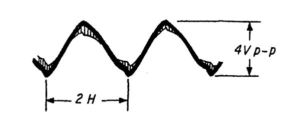
YC-25 BOARD (SECAM)



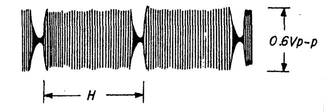
IC001 ⑭ REC



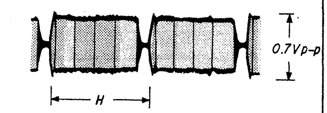
Q015 Ⓔ PB



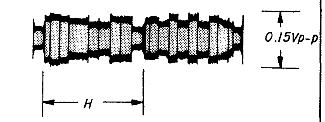
IC007 ⑨ REC/PB



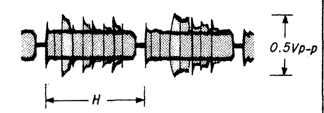
CN001 ① REC



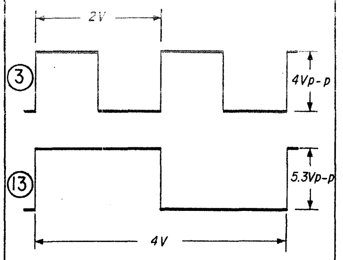
IC009 ⑧ REC



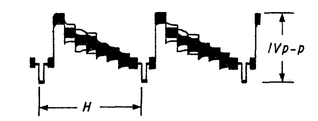
CN001 ② PB



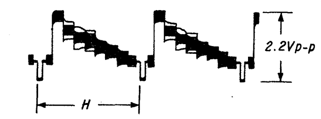
IC009 ⑧ PB



IC001 ③, ⑬ REC/PB



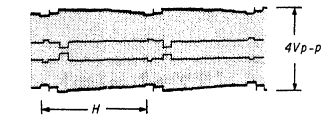
IC013 ⑮ REC



IC014 ㉔ PB

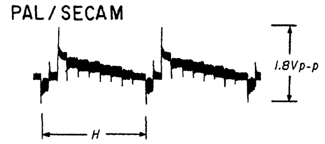
RY - 1 BOARD (PAL/SECAM)

PAL/SECAM



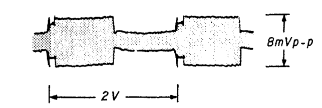
IC1 ⑤, ⑪ REC

PAL/SECAM



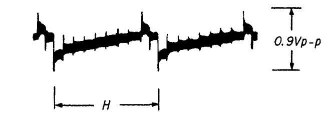
IC4 ⑤ PB

PAL/SECAM



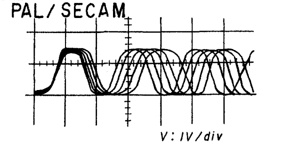
IC1 ⑯, ㉗ PB

PAL/SECAM



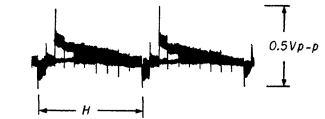
IC4 ⑨ PB

PAL/SECAM



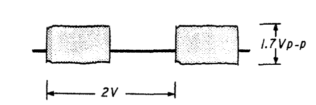
IC2 ④ PB

PAL/SECAM



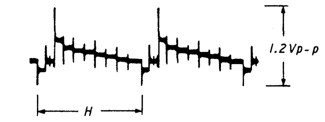
IC4 ⑫ PB

PAL/SECAM



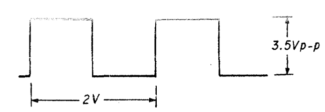
IC2 ⑯, ⑰ PB

PAL/SECAM



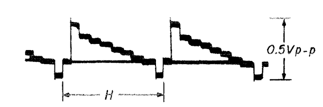
Q15 Ⓒ REC

PAL/SECAM



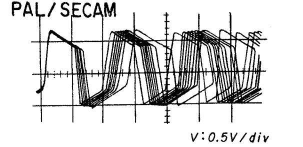
IC2 ⑱ PB

PAL/SECAM



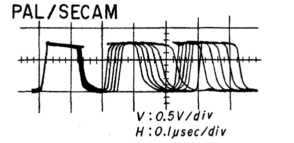
CN5 ⑤ PB

PAL/SECAM



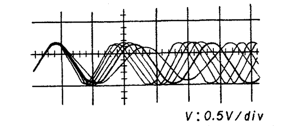
IC3 ④ REC

PAL/SECAM



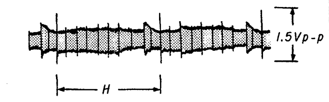
IC3 ⑯ PB

PAL/SECAM



IC4 ① PB

PAL/SECAM

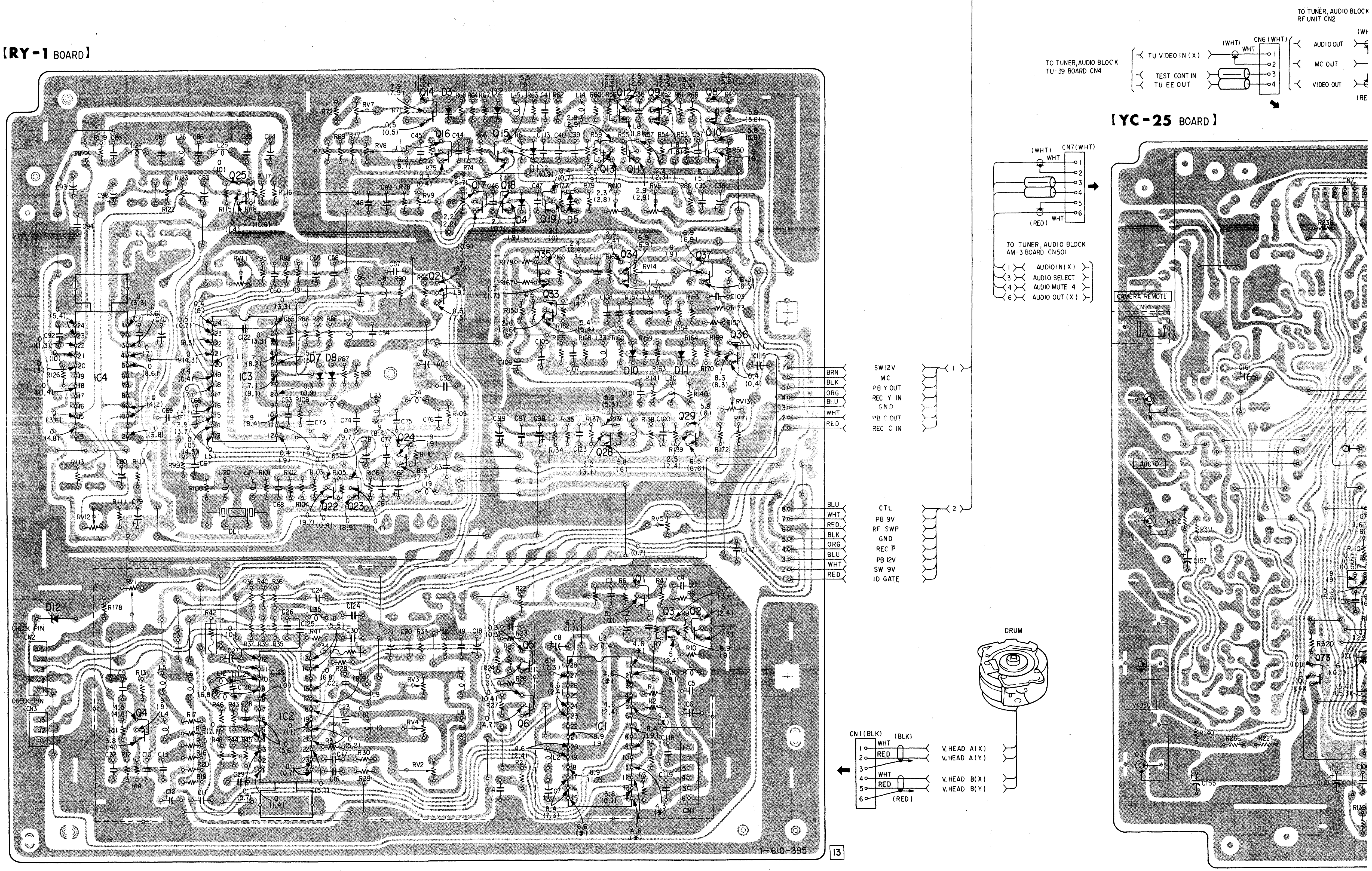


IC4 ④ PB

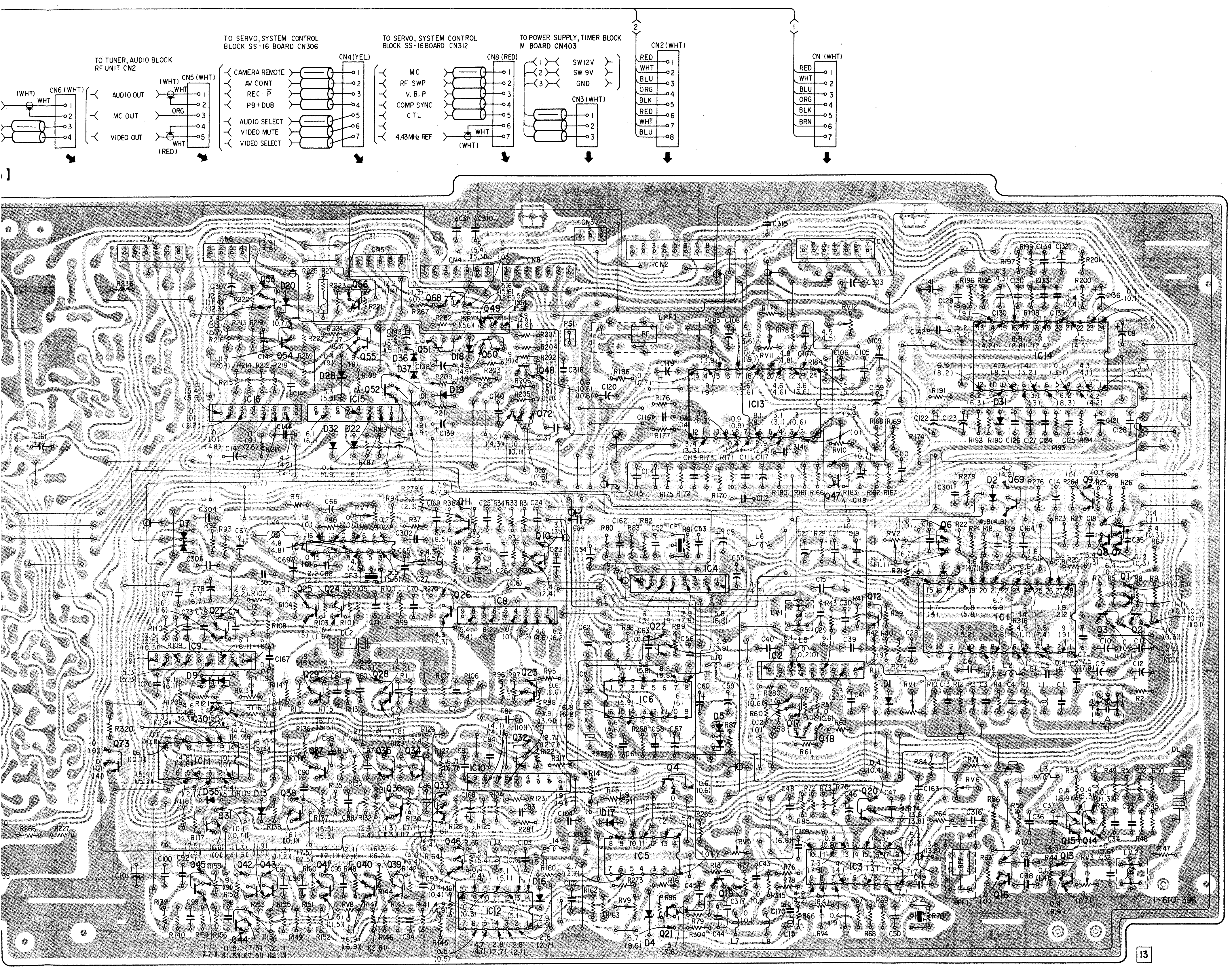
YC-25 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) **RY-1** (LOW CONVERTED CHROMA & Y-FM SIGNALS, RECORD/PLAYBACK AMP)

– Ref. No. YC-25 BOARD: 1000 series, RY-1 BOARD: 2000 series –

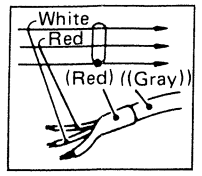
IC·Q	D	RV
14 12 9 8 16 15 13,11 10	3,2	RV7
	1	RV8
25 17,18 19	4,5	RV10, RV9
35 34 37 33 21		RV14 RV11
36 IC4 IC3	10 11 7,8	
		RV13
28 29		
24		
22 23		
		RV12 RV5
1 3,2	12	RV1
5		
		RV3
6		
IC2 IC1 4		RV4
		RV2


[RY-1 BOARD]
[YC-25 BOARD]
1-610-395
13
CHECK PIN CN2
CHECK PIN CN3
CN1
SW 12V
MC
PB Y OUT
REC Y IN
GND
PB C OUT
REC C IN
BRN
BLK
ORG
BLU
WHT
RED
CTL
PB 9V
RF SWP
GND
REC P̄
PB 12V
SW 9V
ID GATE
CN1 (BLK)
(BLK)
V. HEAD A(X)
V. HEAD A(Y)
V. HEAD B(X)
V. HEAD B(Y)
(RED)
DRUM
TO TUNER, AUDIO BLOCK RF UNIT CN2
TO TUNER, AUDIO BLOCK TU-39 BOARD CN4
TU VIDEO IN (X)
TEST CONT IN
TU EE OUT
CN6 (WHT)
AUDIO OUT
MC OUT
VIDEO OUT
CN7 (WHT)
(RED)
TO TUNER, AUDIO BLOCK AM-3 BOARD CN501
AUDIO IN (X)
AUDIO SELECT
AUDIO MUTE 4
AUDIO OUT (X)
CAMERA REMOTE
CN9
AUDIO
VIDEO
IN
OUT

| P | Q | R | S | T | U | V | W | X | Y | Z | A1 | B1 | C1 | D1 | E1


(WHT)
WHT
CN6 (WHT)
TO TUNER, AUDIO BLOCK
RF UNIT CN2
AUDIO OUT
MC OUT
VIDEO OUT
(WHT)
WHT
ORG
WHT
(RED)
CN5 (WHT)
TO SERVO, SYSTEM CONTROL
BLOCK SS-16 BOARD CN306
CAMERA REMOTE
AV CONT
REC · P̄
PB+DUB
AUDIO SELECT
VIDEO MUTE
VIDEO SELECT
CN4 (YEL)
TO SERVO, SYSTEM CONTROL
BLOCK SS-16 BOARD CN312
MC
RF SWP
V. B. P
COMP SYNC
CTL
4.43MHz REF
WHT
(WHT)
CN8 (RED)
TO POWER SUPPLY, TIMER BLOCK
M BOARD CN403
SW 12V
SW 9V
GND
CN3 (WHT)
CN2 (WHT)
RED
WHT
BLU
ORG
BLK
RED
WHT
BLU
CN1 (WHT)
RED
WHT
BLU
ORG
BLK
BRN
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
1-610-396
13

- Color code of sleeving over the end of the jacket.

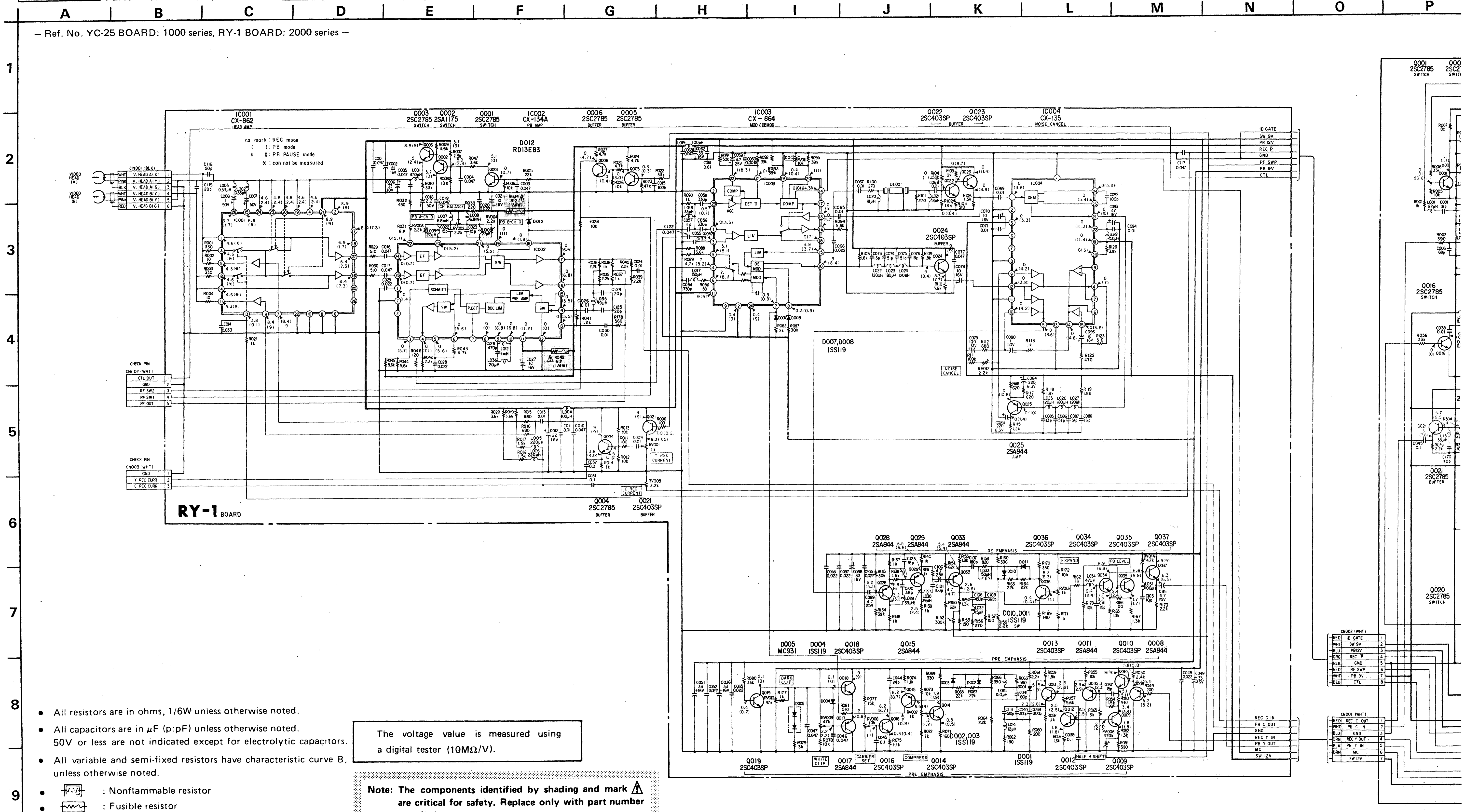

White
Red
(Red) ((Gray))

- ○— indicates a lead wire mounted on the component side.
- ●— indicates a lead wire mounted on the printed side.
- ▨ Soldering side
- ▨ B + pattern

IC·Q	D	RV
68 53 56	20	RV12
		RV11
49 IC14		
54 55 51 52 50	18	
48 IC13	28 36 37	
IC16 IC15	19	
72	32 22 31	RV10
47 69 9	2 7	
6 8 7		RV7 RV2 LV4 LV3
11 IC7 10 1 25 24 26 IC4 27 IC8,12 IC1 3,2		LV1
IC9 22 IC2 23 IC6	9	CV1 RV13 RV1
29 28 30 17 18	1	
	5	
IC11 73 37 35 34 32 IC10 4 38 31 36 33 20 15 14	35 13	RV6
46	17	
IC5 IC3 16 13 45 42 43 41 40 39 19 44 21		RV5 RV3 LV2 RV9 RV8 RV4
IC12	16 4	

YC-25 (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) RY-1 (LOW CONVERTED CHROMA & Y-FM SIGNALS, RECORD/PLAYBACK AMP)

– Ref. No. YC-25 BOARD: 1000 series, RY-1 BOARD: 2000 series –

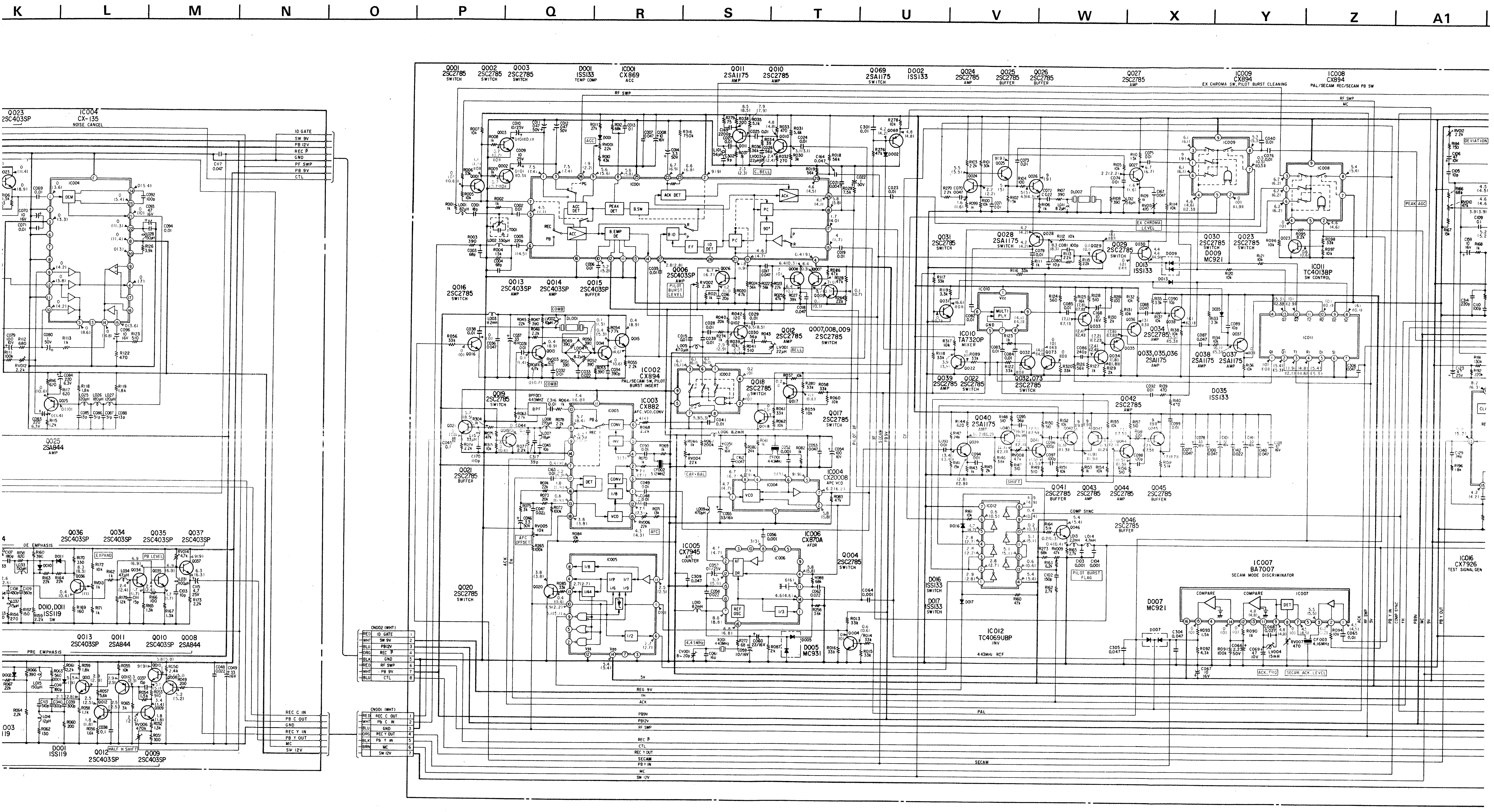

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
1
2
3
4
5
6
7
8
9
10
IC001 CX-862 HEAD AMP
Q003 2SC2785 SWITCH
Q002 2SA1175 SWITCH
Q001 2SC2785 SWITCH
IC002 CX-134A PB AMP
Q006 2SC2785 BUFFER
Q005 2SC2785 BUFFER
IC003 CX-864 MOD / DEMOD
Q022 2SC403SP BUFFER
Q023 2SC403SP
IC004 CX-135 NOISE CANCEL
D012 RD13EB3
no mark : REC mode
( ) : PB mode
《 》: PB PAUSE mode
✽ : can not be measured
VIDEO HEAD (A)
VIDEO HEAD (B)
CN001 (BLK)
V. HEAD A(X)
V. HEAD A(Y)
V. HEAD A(G)
V. HEAD B(X)
V. HEAD B(Y)
V. HEAD B(G)
CHECK PIN CN002 (WHT)
CTL OUT
GND
RF SW2
RF SW1
RF OUT
CHECK PIN CN003 (WHT)
GND
Y REC CURR
C REC CURR
RY-1 BOARD
Q004 2SC2785 BUFFER
Q021 2SC403SP BUFFER
Q024 2SC403SP BUFFER
D007,D008 ISS119
NOISE CANCEL
Q025 2SA844 AMP
Y REC CURRENT
C REC CURRENT
PB A-CH G
PB B-CH G
CH BALANCE
ID GATE
SW 9V
PB 12V
REC P
GND
PF SWP
PB 9V
CTL
Q028 2SA844
Q029 2SA844
Q033 2SA844
Q036 2SC403SP
Q034 2SC403SP
Q035 2SC403SP
Q037 2SC403SP
DE EMPHASIS
EXPAND
PB LEVEL
D010,D011 ISS119
D005 MC931
D004 ISS119
Q018 2SC403SP
Q015 2SA844
Q013 2SC403SP
Q011 2SA844
Q010 2SC403SP
Q008 2SA844
PRE EMPHASIS
DARK CLIP
WHITE CLIP
CARRIER SET
COMPRESS
HALF H SHIFT
Q019 2SC403SP
Q017 2SA844
Q016 2SC403SP
Q014 2SC403SP
D002,003 ISS119
D001 ISS119
Q012 2SC403SP
Q009 2SC403SP
REC C IN
PB C OUT
GND
REC Y IN
PB Y OUT
MC
SW 12V
Q001 2SC2785 SWITCH
Q016 2SC2785 SWITCH
Q021 2SC2785 BUFFER
Q020 2SC2785 SWITCH
CN002 (WHT)
CN001 (WHT)

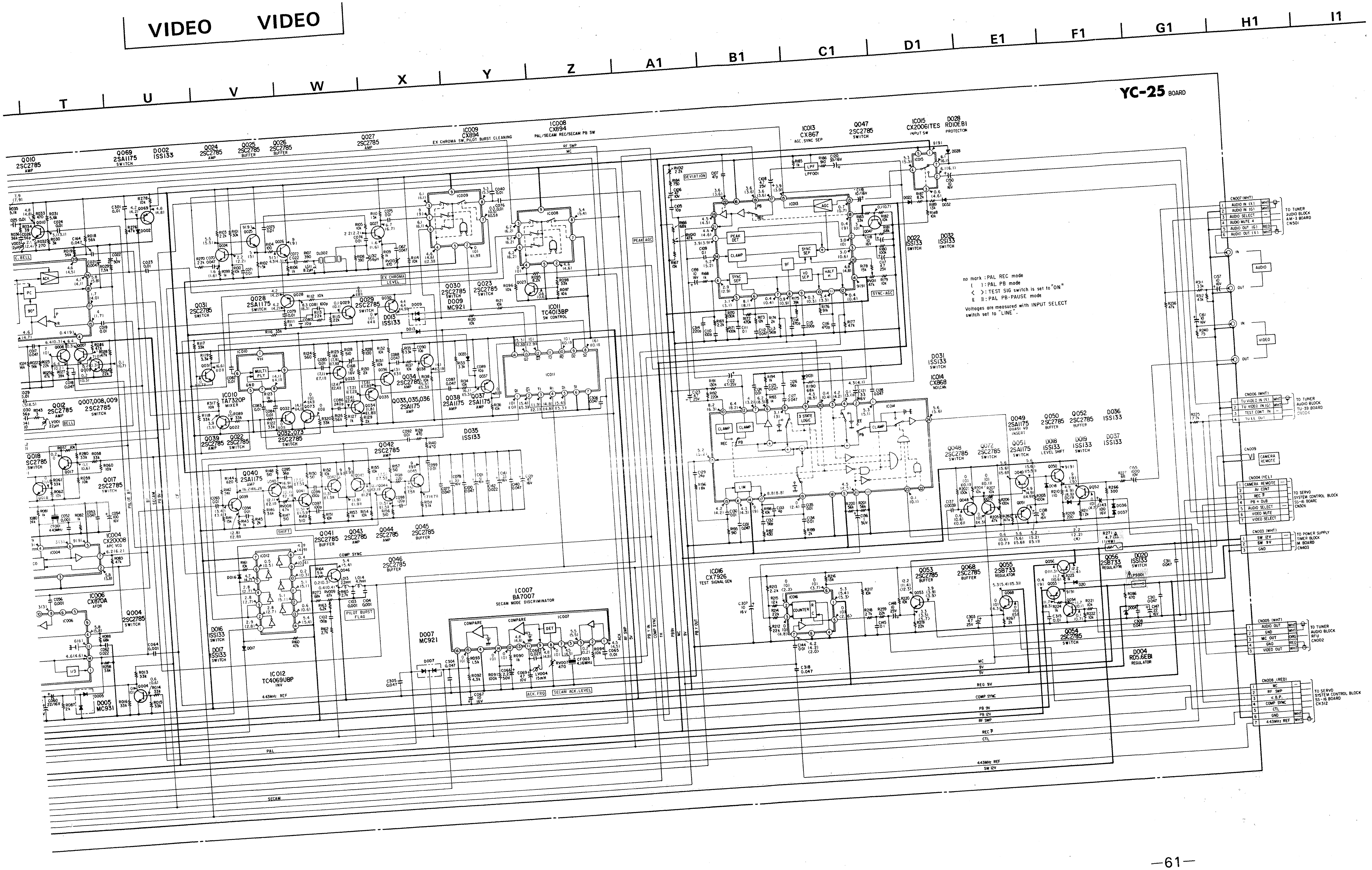
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- ▨ : Nonflammable resistor
- ▭ : Fusible resistor
- △ : Internal component.
- ▬ : **B + bus.**
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.

The voltage value is measured using a digital tester (10MΩ/V).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

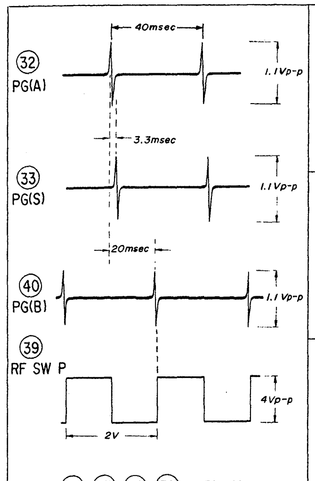
When indicating parts by reference number, please include the board name.


K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z
A1
Q023 2SC403SP
IC004 CX-135 NOISE CANCEL
Q025 2SA844 AMP
Q036 2SC403SP
Q034 2SC403SP
Q035 2SC403SP
Q037 2SC403SP
DE EMPHASIS
EXPAND
PB LEVEL
D010,D011 ISS119 SW
Q013 2SC403SP
Q011 2SA844
Q010 2SC403SP
Q008 2SA844
PRE EMPHASIS
D001 ISS119
Q012 2SC403SP
Q009 2SC403SP
HALF H SHIFT
Q001 2SC2785 SWITCH
Q002 2SC2785 SWITCH
Q003 2SC2785 SWITCH
D001 ISS133 TEMP COMP
IC001 CX869 ACC
Q011 2SA1175 AMP
Q010 2SC2785 AMP
Q069 2SA1175 SWITCH
D002 ISS133
Q024 2SC2785 AMP
Q025 2SC2785 BUFFER
Q026 2SC2785 BUFFER
Q027 2SC2785 AMP
IC009 CX894 EX CHROMA SW, PILOT BURST CLEANING
IC008 CX894 PAL/SECAM REC/SECAM PB SW
RF SWP
ACC DET
PEAK DET
B.SW
ACK DET
ACK
C.BELL
PILOT BURST LEVEL
Q006 2SC403SP AMP
Q013 2SC403SP AMP
Q014 2SC403SP AMP
Q015 2SC403SP BUFFER
Q016 2SC2785 SWITCH
COMB
Q012 2SC2785 AMP
Q007,008,009 2SC2785 SWITCH
BELL
IC002 CX894 PAL/SECAM SW, PILOT BURST INSERT
Q018 2SC2785 SWITCH
Q017 2SC2785 SWITCH
Q019 2SC2785 SWITCH
IC003 CX882 AFC,VCO,CONV
Q021 2SC2785 BUFFER
AFC OFFSET
AFC
CAR•BAL
IC004 CX20008 AFC VCO
IC005 CX7945 AFC COUNTER
IC006 CX870A AFDR
Q004 2SC2785 SWITCH
Q020 2SC2785 SWITCH
D005 MC931
CN002 (WHT)
ID GATE
SW 9V
PB12V
REC P
GND
RF SWP
PB 9V
CTL
CN001 (WHT)
REC C OUT
PB C IN
GND
REC Y OUT
PB Y IN
MC
SW 12V
REC C IN
PB C OUT
REC Y IN
PB Y OUT
5V
REG 9V
FH
ACK
PAL
PB9V
PB12V
RF SWP
REC P
CTL
REC Y OUT
SECAM
PB Y IN
MC
SW 12V
Q031 2SC2785 SWITCH
Q028 2SA1175 SWITCH
Q029 2SC2785 SWITCH
D013 ISS133
EX CHROMA LEVEL
Q030 2SC2785 SWITCH
D009 MC921
Q023 2SC2785 SWITCH
IC011 TC4013BP SW CONTROL
IC010 TA7320P MIXER
Q032,073 2SC2785 SWITCH
Q034 2SA1175 AMP
Q033,035,036 2SA1175 AMP
Q038 2SA1175 AMP
Q037 2SA1175 AMP
Q039 2SC2785 AMP
Q022 2SC2785 SWITCH
Q042 2SC2785 AMP
D035 ISS133
Q040 2SA1175 AMP
SHIFT
Q041 2SC2785 BUFFER
Q043 2SC2785 AMP
Q044 2SC2785 AMP
Q045 2SC2785 BUFFER
COMP SYNC
Q046 2SC2785 BUFFER
PILOT BURST FLAG
D016 ISS133 SWITCH
D017 ISS133 SWITCH
IC012 TC4069UBP INV
4.43MHz BCF
IC007 BA7007 SECAM MODE DISCRIMINATOR
COMPARE
DET
D007 MC921
ACK.FHO
SECAM ACK LEVEL
PEAK AGC
DEVIATION
IC016 CX7926 TEST SIGNAL GEN

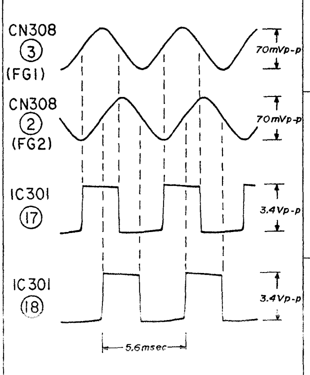

T
U
V
W
X
Y
Z
A1
B1
C1
D1
E1
F1
G1
H1
I1
YC-25 BOARD
Q010 2SC2785 AMP
Q069 2SA1175 SWITCH
D002 1SS133
Q024 2SC2785 AMP
Q025 2SC2785 BUFFER
Q026 2SC2785 BUFFER
Q027 2SC2785 AMP
IC009 CX894 EX CHROMA SW, PILOT BURST CLEANING
IC008 CX894 PAL/SECAM REC/SECAM PB SW
IC013 CX867 AGC, SYNC SEP
Q047 2SC2785 SWITCH
IC015 CX20061TES INPUT SW
D028 RD10EB1 PROTECTION
DEVIATION
PEAK AGC
PEAK DET
CLAMP
SYNC SEP
AGC
SYNC-AGC
LPF
LPF001
C BELL
EX CHROMA LEVEL
Q030 2SC2785 SWITCH
Q023 2SC2785 SWITCH
D009 MC921
IC011 TC4013BP SW CONTROL
Q031 2SC2785 SWITCH
Q028 2SA1175 SWITCH
Q029 2SC2785 SWITCH
D013 1SS133
D022 1SS133 SWITCH
D032 1SS133 SWITCH
IC010 TA7320P MIXER
MULTI PLY
Q012 2SC2785 AMP
Q007,008,009 2SC2785 SWITCH
Q034 2SC2785 AMP
Q033,035,036 2SA1175 AMP
Q038 2SA1175 SWITCH
Q037 2SA1175 AMP
Q039 2SC2785 AMP
Q022 2SC2785 SWITCH
Q032,073 2SC2785 SWITCH
Q042 2SC2785 AMP
D035 1SS133
D031 1SS133 SWITCH
IC014 CX868 NOI.CAN
3 STATE LOGIC
CLAMP
LIM
Q018 2SC2785 SWITCH
Q017 2SC2785 SWITCH
Q040 2SA1175 AMP
Q041 2SC2785 BUFFER
Q043 2SC2785 AMP
Q044 2SC2785 AMP
Q045 2SC2785 BUFFER
SHIFT
IC004 CX20008 APC VCO
COMP SYNC
Q046 2SC2785 BUFFER
IC012
IC006 CX870A AFDR
Q004 2SC2785 SWITCH
D016 1SS133 SWITCH
D017 1SS133 SWITCH
IC012 TC4069UBP INV
PILOT BURST FLAG
IC007 BA7007 SECAM MODE DISCRIMINATOR
COMPARE
DET
D007 MC921
ACK.FRQ
SECAM ACK.LEVEL
D005 MC931
4.43MHz REF
IC016 CX7926 TEST SIGNAL GEN
COUNTER
Q053 2SC2785 BUFFER
Q068 2SC2785 BUFFER
Q055 2SB733 REGULATOR
Q056 2SB733 REGULATOR
D020 1SS133 SWITCH
Q054 2SC2785 SWITCH
D004 RD5.6EB1 REGULATOR
Q049 2SA1175 QUASI VD INSERT
Q050 2SC2785 BUFFER
Q052 2SC2785 BUFFER
D036 1SS133
Q048 2SC2785 SWITCH
Q072 2SC2785 SWITCH
Q051 2SA1175 SWITCH
D018 1SS133 LEVEL SHIFT
D019 1SS133 SWITCH
D037 1SS133
PS001
MC
9V
5V
REG 9V
COMP SYNC
PB 9V
PB 12V
RF SWP
REC P
CTL
4.43MHz REF
SW 12V
PAL
SECAM
IN
OUT
AUDIO
VIDEO
CN007 (WHT)
1 AUDIO IN (X) WHT
2 AUDIO IN (G) WHT
3 AUDIO SELECT —
4 AUDIO MUTE 4
5 AUDIO OUT (G) RED
6 AUDIO OUT (X) WHT
TO TUNER AUDIO BLOCK AM-3 BOARD CN501
CN006 (WHT)
1 TU VIDEO IN (X) WHT
2 TU VIDEO IN (G) WHT
3 TEST CONT IN —
4 TU EE OUT
TO TUNER AUDIO BLOCK TU-39 BOARD CN004
CN009
CAMERA REMOTE
CN004 (YEL)
1 CAMERA REMOTE —
2 AV CONT
3 REC P
4 PB + DUB
5 AUDIO SELECT —
6 VIDEO MUTE
7 VIDEO SELECT
TO SERVO SYSTEM CONTROL BLOCK SS-16 BOARD CN306
CN003 (WHT)
1 SW 12V —
2 SW 9V
3 GND
TO POWER SUPPLY TIMER BLOCK M BOARD CN403
CN005 (WHT)
1 AUDIO OUT WHT
2 GND WHT
3 MC OUT ORG
4 GND RED
5 VIDEO OUT WHT
TO TUNER AUDIO BLOCK RFU CN002
CN008 (RED)
1 MC —
2 RF SWP
3 V.B.P.
4 COMP SYNC
5 CTL
6 GND WHT
7 4.43MHz REF WHT
TO SERVO SYSTEM CONTROL BLOCK SS-16 BOARD CN312

no mark : PAL REC mode
( ) : PAL PB mode
< > : TEST SIG switch is set to "ON"
(( )) : PAL PB·PAUSE mode
Voltages are measured with INPUT SELECT switch set to "LINE".

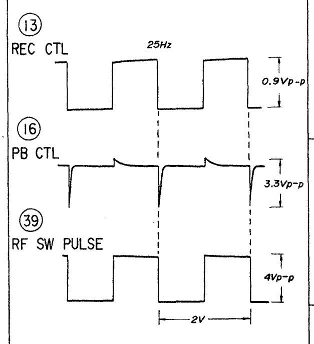
SS-16 (SERVO) BOARD



IC301 ㉜ ㉝ ㊵ ㊴ REC/PB

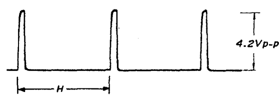


REC / PB



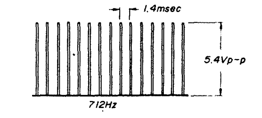
IC301 ⑬, ⑯, ㊴ PB

TRACKING - CENTER

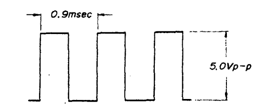


IC301 ③ REC

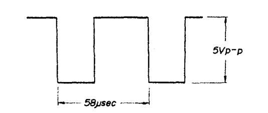
IC301 ⑥ CUE/REV COMP SYNC



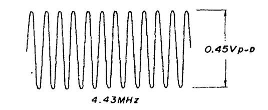
IC301 ⑲ REC/PB



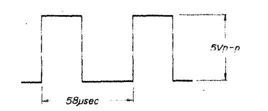
IC301 ⑳ REC/PB



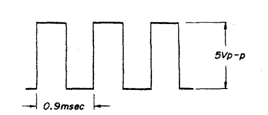
IC301 ㉔ REC/PB



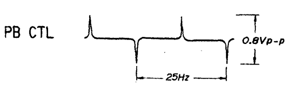
IC301 ㉘ REC/PB



IC301 ㉞ REC/PB

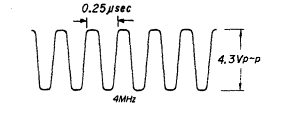


IC301 ㊲ REC/PB

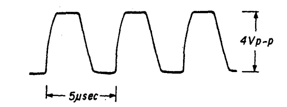


IC302 ① PB

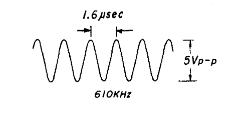
SS-16 (SYSTEM CONTROL) BOARD



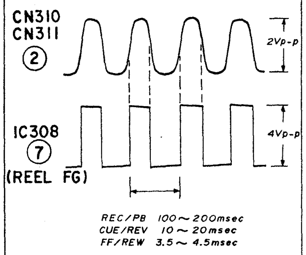
IC601 ㉖



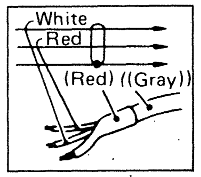
Q605 Ⓒ REW / REV



CN604 ② TAPE END



- Color code of sleeving over the end of the jacket.

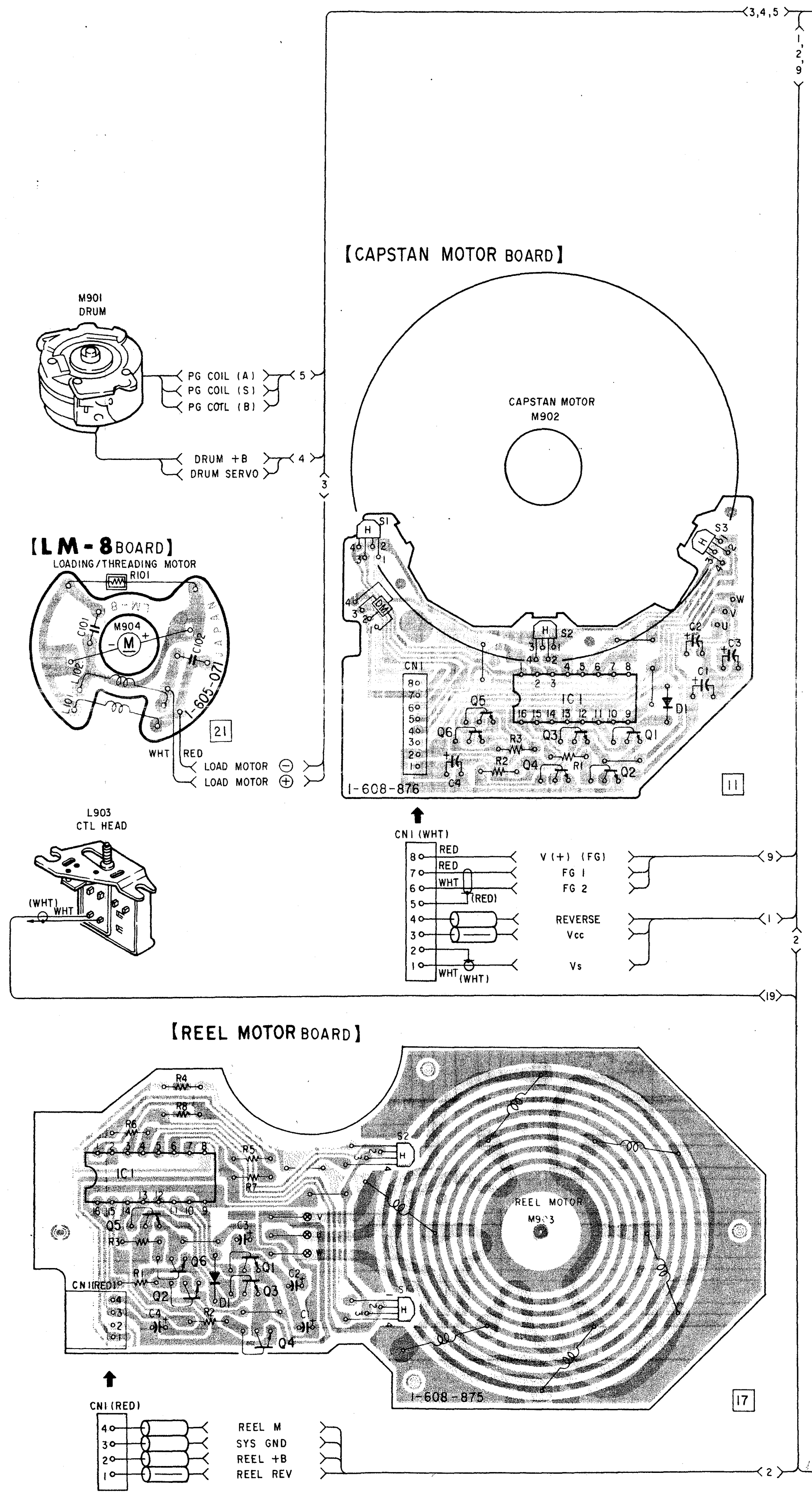

White
Red
(Red) ((Gray))

- ○— indicates a lead wire mounted on the component side.
- ●— indicates a lead wire mounted on the printed side.
- ▨ Soldering side
- Component side
- ░ B + pattern

SS-16 (SERVO/SYSTEM CONTROL) **FU-14** (FUNCTION SWITCH) **SW-25** (TONE INPUT SELECT SWITCH TRACKING) **RD-6** (ROTATION DETECTOR) **RD-7** (ROTATION DETECTOR

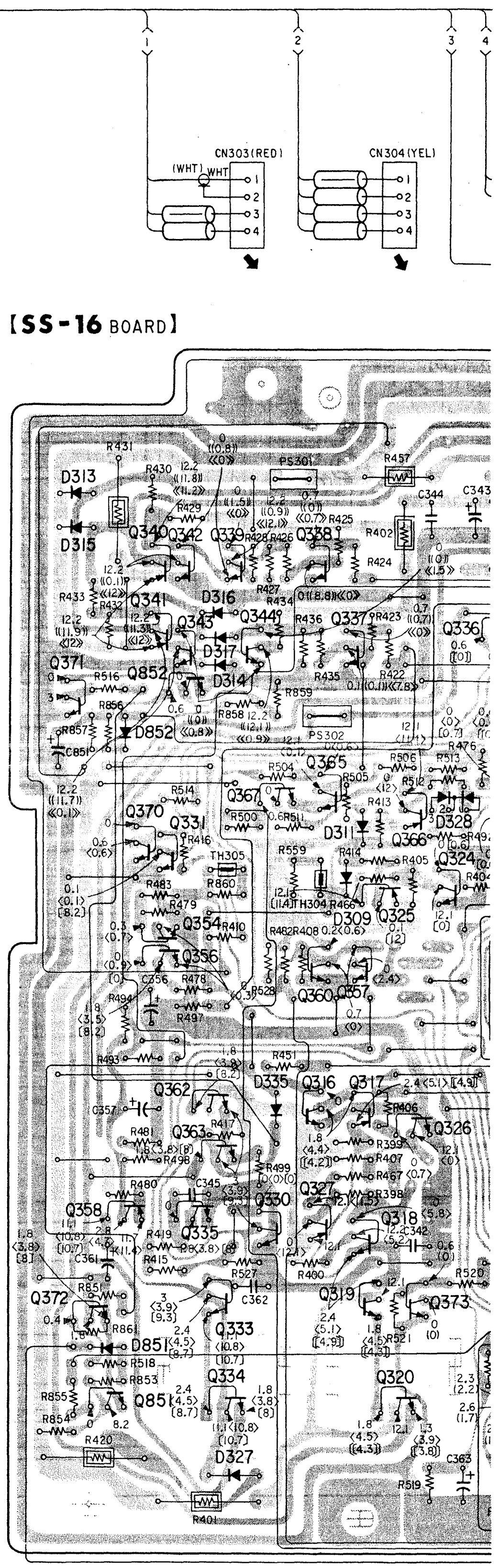
A B C D E F G H I J K

– Ref. No. SS-16 BOARD: 3000 series, FU-14 BOARD: 4700 series, SW-25 BOARD: 4600 series, RD-6, RD-7 BOARD: 9200 series, LM-8 BOARD: 9100 series, CAPSTANMOTOR BOARD: 5100 series, REELM


M901
DRUM
PG COIL (A)
PG COIL (S)
PG COIL (B)
DRUM +B
DRUM SERVO
【CAPSTAN MOTOR BOARD】
CAPSTAN MOTOR
M902
CN1
IC1
1-608-876
11
【LM-8 BOARD】
LOADING/THREADING MOTOR
R101
M904
21
WHT
RED
LOAD MOTOR ⊖
LOAD MOTOR ⊕
L903
CTL HEAD
(WHT)
WHT
CN1 (WHT)
RED
RED
WHT
(RED)
WHT (WHT)
V (+) (FG)
FG 1
FG 2
REVERSE
Vcc
Vs
【REEL MOTOR BOARD】
REEL MOTOR
M903
IC1
CN1(RED)
1-608-875
17
CN1 (RED)
REEL M
SYS GND
REEL +B
REEL REV
3,4,5
5
4
3
9
1
2
19

Q · IC	D	TP · RV
	313 315	
349,346 339 302,303,352 340,342,338 347,348 314 313	613 316	
341,344,337 616 343 336 604,614 312 311,IC308	317 301 314 302 612,610	406 RV302
371 852 345 615 310 605,613		404 402 403
355 309 332 359 370,367,365 301 366 IC301 620 618 368 608 606 607,617 370 307 609,612 331	852 326 617 607 328 311 616	RV309,RV304 RV301
324 325 IC303 611 354 IC304 610,619 356 357 360	309 614 330 608 329 308	405 RV303 410 401 RV310 409
364	304	
IC305 636 362,316,317 326 363	335	RV308,RV307 605 407,601
327 315 IC307 IC306 IC601 358,335,330,318 322 627		
333 319 373 372	339,340 851	
334 851,320 IC302 306,305 626 624,623,631,630,629,628 304,622,621,625,633,634,632	306 341 327 325	

【SS-16 BOARD】

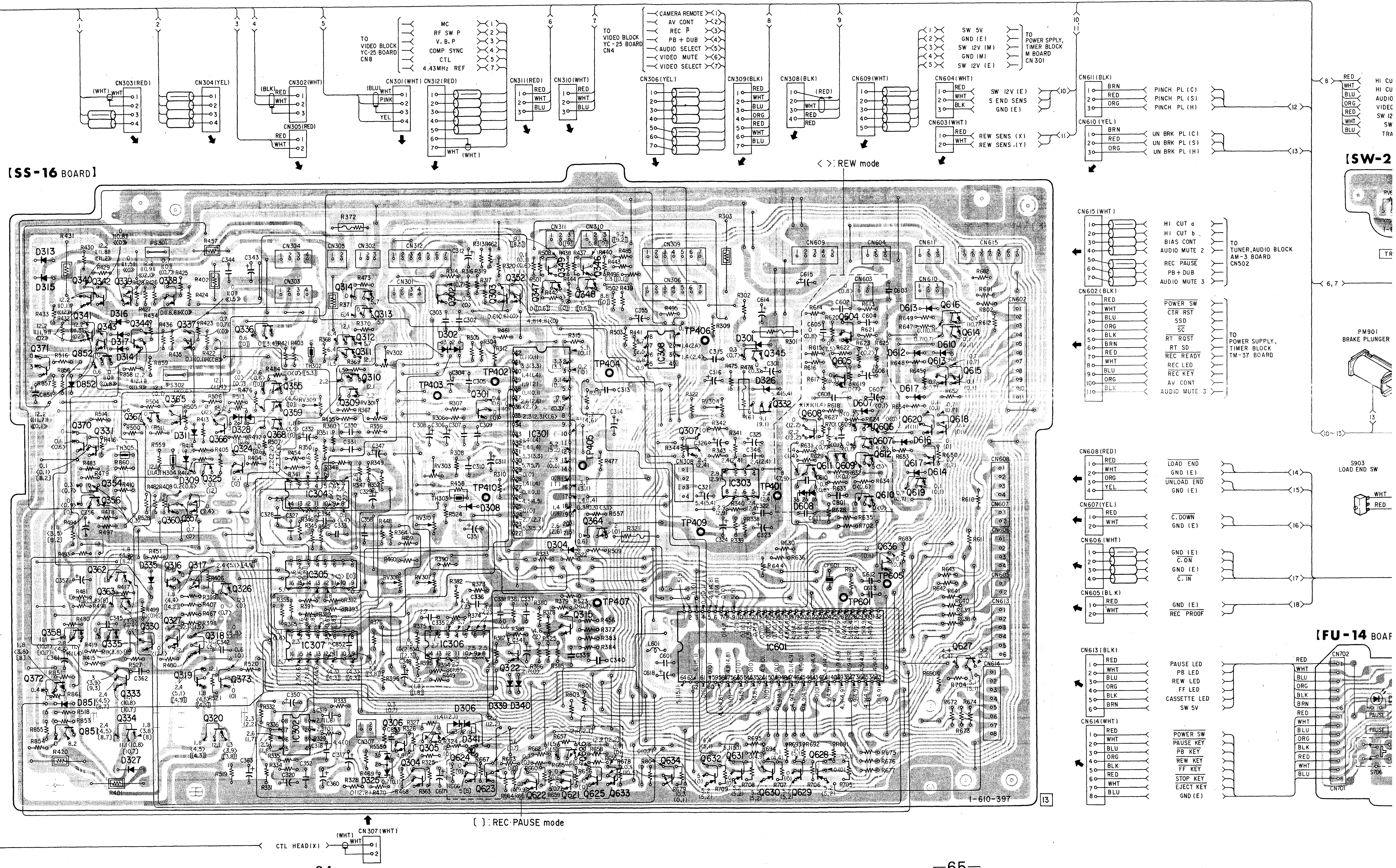

CN303 (RED)
CN304 (YEL)
(WHT)
WHT
D313
D315
Q340
Q342
Q339
Q338
Q341
Q343
Q337
Q336
D316
D317
D314
Q371
Q852
D852
Q370
Q331
Q367
Q365
D311
Q366
Q324
D328
Q354
Q356
Q360
Q357
Q309
Q325
Q362
D335
Q316
Q317
Q363
Q326
Q358
Q335
Q330
Q321
Q318
Q372
Q333
Q319
Q373
Q334
Q851
D851
D327
Q320
TH305
R401
R420

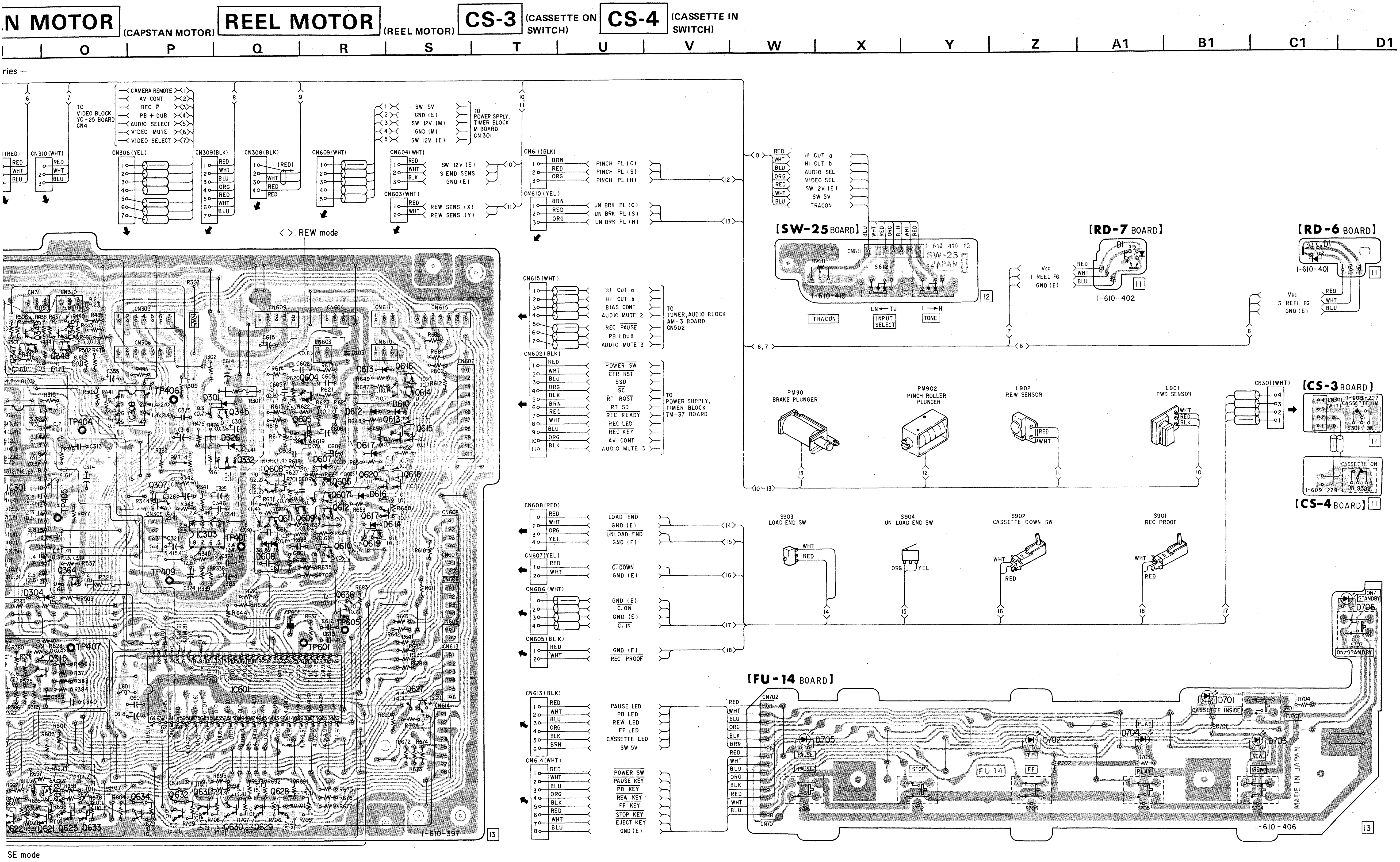
RD-6 (ROTATION DETECTOR) **RD-7** (ROTATION DETECTOR) **LM-8** (NOISE FILTER) **CAPSTAN MOTOR** (CAPSTAN MOTOR) **REEL MOTOR** (REEL MOTOR) **CS-3** (CASSETTE ON SWITCH) **CS-4** (CASSETTE IN SWITCH)

G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W

series, LM-8 BOARD: 9100 series, CAPSTANMOTOR BOARD: 5100 series, REELMOTOR BOARD: 5000 series, CS-3, CS-4 BOARD: 9300 series –

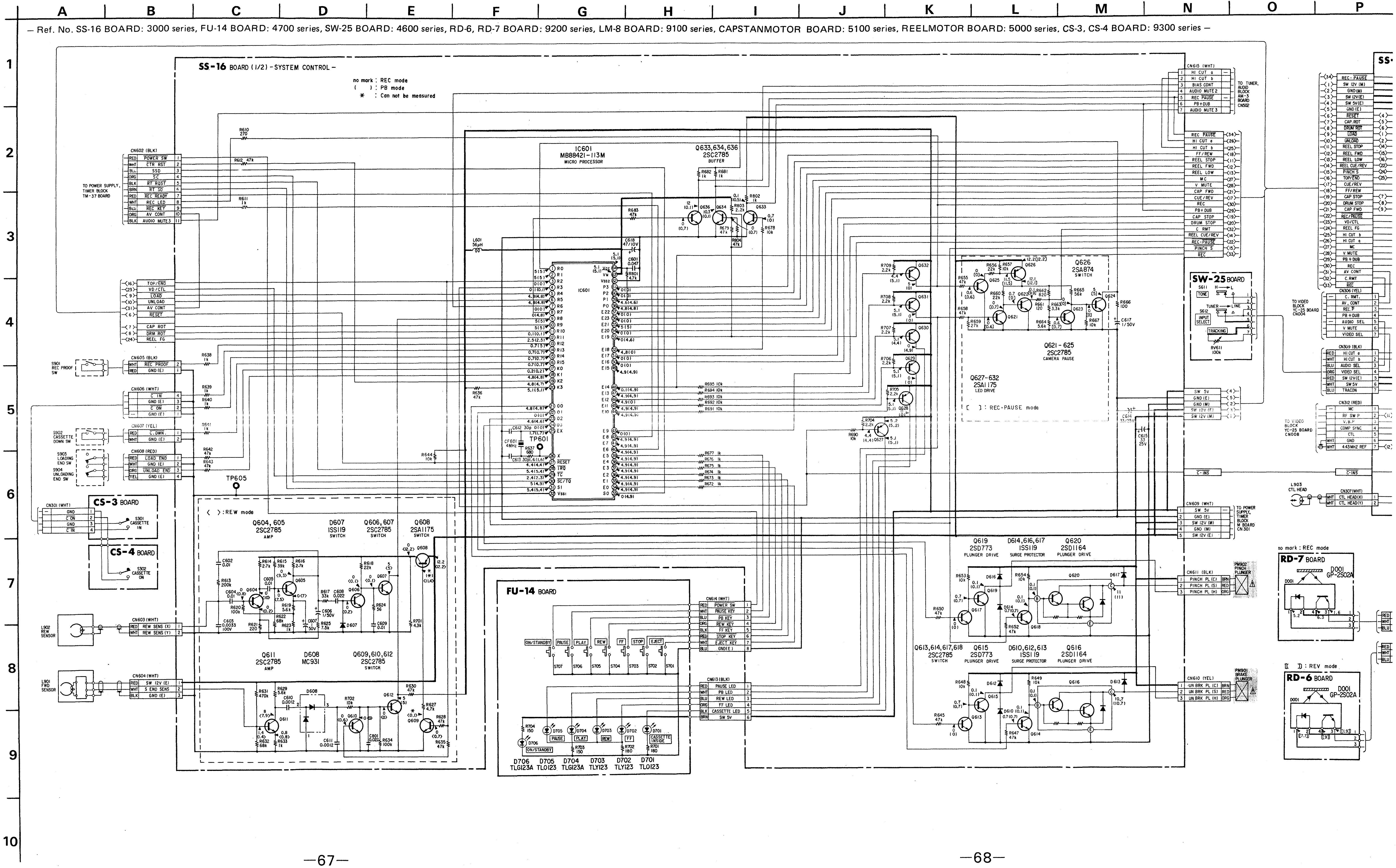
	D	TP · RV
	313	
	315	
46		
48		
	613	
	316	
616 ,4,614	317 301	406
	314 302 612,610	RV302
615		404
,5,613		402
	852 326	403
	617	RV309,RV304
	607	RV301
0,618 06 7,617 ,612	328	
	311 616	
		405
	309 614	RV303
),619	330 608 329 308	410 401
		RV310 409
	304	
		RV308,RV307 605
36	335	
		407,601
:601		
327		
	339,340	
	851	
	306	
	341	
,628 ,632	327 325	


[SS-16 BOARD]
CN303 (RED)
CN304 (YEL)
CN302 (WHT)
CN305 (RED)
CN301 (WHT)
CN312 (RED)
CN311 (RED)
CN310 (WHT)
CN306 (YEL)
CN309 (BLK)
CN308 (BLK)
CN609 (WHT)
CN604 (WHT)
CN603 (WHT)
CN611 (BLK)
CN610 (YEL)
TO VIDEO BLOCK YC-25 BOARD CN8
MC
RF SW P
V. B. P
COMP SYNC
CTL
4.43MHz REF
TO VIDEO BLOCK YC-25 BOARD CN4
CAMERA REMOTE
AV CONT
REC P
PB + DUB
AUDIO SELECT
VIDEO MUTE
VIDEO SELECT
SW 5V
GND (E)
SW 12V (M)
GND (M)
SW 12V (E)
TO POWER SPPLY, TIMER BLOCK M BOARD CN 301
SW 12V (E)
S END SENS
GND (E)
REW SENS (X)
REW SENS (Y)
PINCH PL (C)
PINCH PL (S)
PINCH PL (H)
UN BRK PL (C)
UN BRK PL (S)
UN BRK PL (H)
( ) : REW mode
CN615 (WHT)
HI CUT a
HI CUT b
BIAS CONT
AUDIO MUTE 2
REC PAUSE
PB + DUB
AUDIO MUTE 3
TO TUNER, AUDIO BLOCK AM-3 BOARD CN502
CN602 (BLK)
POWER SW
CTR RST
SSD
SC
RT RQST
RT SD
REC READY
REC LED
REC KEY
AV CONT
AUDIO MUTE 3
TO POWER SUPPLY, TIMER BLOCK TM-37 BOARD
CN608 (RED)
LOAD END
GND (E)
UNLOAD END
GND (E)
CN607 (YEL)
C. DOWN
GND (E)
CN606 (WHT)
GND (E)
C. ON
GND (E)
C. IN
CN605 (BLK)
GND (E)
REC PROOF
CN613 (BLK)
PAUSE LED
PB LED
REW LED
FF LED
CASSETTE LED
SW 5V
CN614 (WHT)
POWER SW
PAUSE KEY
PB KEY
REW KEY
FF KEY
STOP KEY
EJECT KEY
GND (E)
[SW-2
PM901 BRAKE PLUNGER
S903 LOAD END SW
[FU-14 BOAR
CN702
CN701
PAUSE
S706
IC301
IC303
IC304
IC305
IC306
IC307
IC308
IC601
TP401
TP402
TP403
TP404
TP405
TP406
TP407
TP409
TP410
TP601
TP605
1-610-397
[ ] : REC·PAUSE mode
CN307 (WHT)
CTL HEAD (X)


N MOTOR
(CAPSTAN MOTOR)
REEL MOTOR
(REEL MOTOR)
CS-3
(CASSETTE ON SWITCH)
CS-4
(CASSETTE IN SWITCH)
O
P
Q
R
S
T
U
V
W
X
Y
Z
A1
B1
C1
D1
ries –
TO VIDEO BLOCK YC-25 BOARD CN4
CAMERA REMOTE
AV CONT
REC P
PB + DUB
AUDIO SELECT
VIDEO MUTE
VIDEO SELECT
CN310 (WHT)
CN306 (YEL)
CN309 (BLK)
CN308 (BLK)
CN609 (WHT)
SW 5V
GND (E)
SW 12V (M)
GND (M)
SW 12V (E)
TO POWER SPPLY, TIMER BLOCK M BOARD CN 301
CN604 (WHT)
SW 12V (E)
S END SENS
GND (E)
CN603 (WHT)
REW SENS (X)
REW SENS (Y)
CN611 (BLK)
PINCH PL (C)
PINCH PL (S)
PINCH PL (H)
CN610 (YEL)
UN BRK PL (C)
UN BRK PL (S)
UN BRK PL (H)
< >: REW mode
HI CUT a
HI CUT b
AUDIO SEL
VIDEO SEL
SW 12V (E)
SW 5V
TRACON
[SW-25 BOARD]
1-610-410
TRACON
INPUT SELECT
TONE
LN ← TU
L → H
[RD-7 BOARD]
1-610-402
Vcc
T REEL FG
GND (E)
[RD-6 BOARD]
1-610-401
S REEL FG
CN615 (WHT)
HI CUT a
HI CUT b
BIAS CONT
AUDIO MUTE 2
REC PAUSE
PB + DUB
AUDIO MUTE 3
TO TUNER, AUDIO BLOCK AM-3 BOARD CN502
CN602 (BLK)
POWER SW
CTR RST
SSD
SC
RT RDST
RT SD
REC READY
REC LED
REC KEY
AV CONT
AUDIO MUTE 3
TO POWER SUPPLY, TIMER BLOCK TM-37 BOARD
PM901 BRAKE PLUNGER
PM902 PINCH ROLLER PLUNGER
L902 REW SENSOR
L901 FWD SENSOR
CN301 (WHT)
[CS-3 BOARD]
1-609-227
CASSETTE IN
S301 ON
CASSETTE ON
1-609-228
S302
[CS-4 BOARD]
CN608 (RED)
LOAD END
GND (E)
UNLOAD END
GND (E)
CN607 (YEL)
C.DOWN
GND (E)
CN606 (WHT)
GND (E)
C.ON
GND (E)
C.IN
CN605 (BLK)
GND (E)
REC PROOF
S903 LOAD END SW
S904 UN LOAD END SW
S902 CASSETTE DOWN SW
S901 REC PROOF
IC301
IC303
IC308
IC601
TP401
TP404
TP405
TP406
TP407
TP409
TP601
TP605
1-610-397
CN613 (BLK)
PAUSE LED
PB LED
REW LED
FF LED
CASSETTE LED
SW 5V
CN614 (WHT)
POWER SW
PAUSE KEY
PB KEY
REW KEY
FF KEY
STOP KEY
EJECT KEY
GND (E)
[FU-14 BOARD]
CN702
CN701
D701 CASSETTE INSIDE
S701 EJECT
D702 FF
D703 REW
D704 PLAY
D705 PAUSE
D706 ON/STANDBY
S707 ON/STANDBY
S702 STOP
S703 FF
S704 REW
S705 PLAY
S706 PAUSE
MADE IN JAPAN
FU 14
1-610-406
SE mode

SS-16 (SERVO/SYSTEM CONTROL) **FU-14** (FUNCTION SWITCH) **SW-25** (TONE INPUT SELECT SWITCH TRACKING) **RD-6** (ROTATION DETECTOR) **RD-7** (ROTATION DETECTOR) **LM-8** (NOISE FILTER) **CAPSTAN MOTOR** (CAPSTAN MOTO

– Ref. No. SS-16 BOARD: 3000 series, FU-14 BOARD: 4700 series, SW-25 BOARD: 4600 series, RD-6, RD-7 BOARD: 9200 series, LM-8 BOARD: 9100 series, CAPSTANMOTOR BOARD: 5100 series, REELMOTOR BOARD: 5000 series, CS-3, CS-4 BOARD: 9300 series –

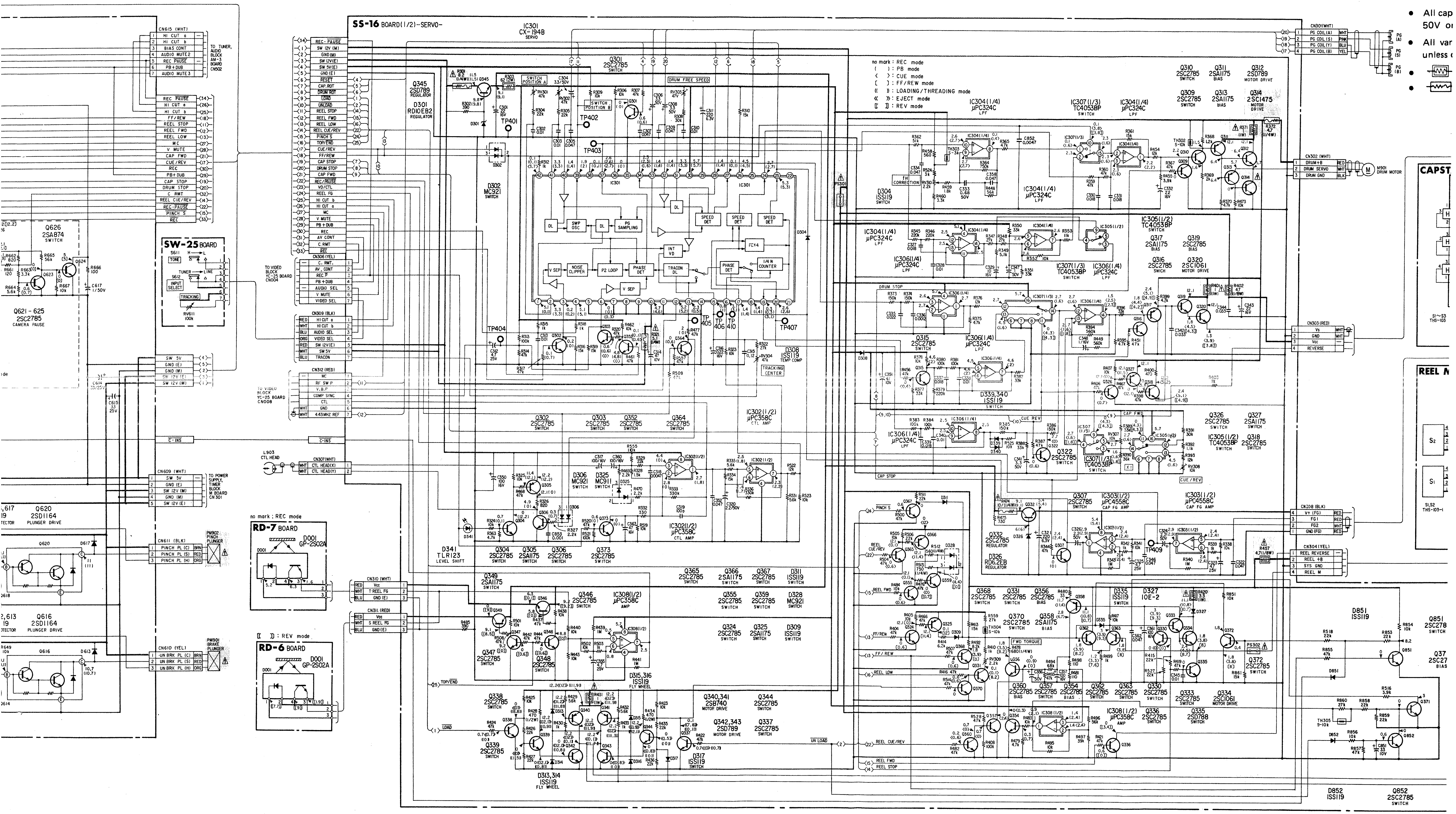

A B C D E F G H I J K L M N O P
1 2 3 4 5 6 7 8 9 10
SS-16 BOARD (1/2) - SYSTEM CONTROL -
no mark : REC mode
( ) : PB mode
* : Can not be measured
IC601
MB88421-113M
MICRO PROCESSOR
Q633,634,636
2SC2785
BUFFER
TO POWER SUPPLY, TIMER BLOCK TM-37 BOARD
CN602 (BLK)
POWER SW
CTR RST
SSD
SC
RT RST
RT SD
REC READY
REC LED
REC KEY
AV CONT
AUDIO MUTE3
TOP/END
VD/CTL
LOAD
UNLOAD
AV CONT
RESET
CAP ROT
DRM ROT
REEL FG
S901 REC PROOF SW
CN605 (BLK)
REC PROOF
GND (E)
CN606 (WHT)
C IN
GND (E)
C ON
GND (E)
S902 CASSETTE DOWN SW
CN607 (YEL)
C. DOWN
GND (E)
S903 LOADING END SW
S904 UNLOADING END SW
CN608 (RED)
LOAD END
GND (E)
UNLOAD END
GND (E)
TP601
TP605
CF601 4MHz
L601 56μH
CS-3 BOARD
S301 CASSETTE IN
CN301 (WHT)
CS-4 BOARD
S302 CASSETTE ON
L902 REW SENSOR
CN603 (WHT)
REW SENS (X)
REW SENS (Y)
L901 FWD SENSOR
CN604 (WHT)
SW 12V (E)
S END SENS
GND (E)
( ) : REW mode
Q604, 605 2SC2785 AMP
D607 1SS119 SWITCH
Q606, 607 2SC2785 SWITCH
Q608 2SA1175 SWITCH
Q611 2SC2785 AMP
D608 MC931
Q609,610,612 2SC2785 SWITCH
FU-14 BOARD
ON/STANDBY
PAUSE
PLAY
REW
FF
STOP
EJECT
S707 S706 S705 S704 S703 S702 S701
CN614 (WHT)
POWER SW
PAUSE KEY
PB KEY
REW KEY
FF KEY
STOP KEY
EJECT KEY
GND (E)
CN613 (BLK)
PAUSE LED
PB LED
REW LED
FF LED
CASSETTE LED
SW 5V
CASSETTE INSIDE
D706 TLG123A
D705 TLO123
D704 TLG123A
D703 TLY123
D702 TLY123
D701 TLO123
Q626 2SA874 SWITCH
Q621 - 625 2SC2785 CAMERA PAUSE
Q627-632 2SA1175 LED DRIVE
[ ] : REC-PAUSE mode
Q619 2SD773 PLUNGER DRIVE
D614,616,617 1SS119 SURGE PROTECTOR
Q620 2SD1164 PLUNGER DRIVE
Q613,614,617,618 2SC2785 SWITCH
Q615 2SD773 PLUNGER DRIVE
D610,612,613 1SS119 SURGE PROTECTOR
Q616 2SD1164 PLUNGER DRIVE
CN615 (WHT)
HI CUT a
HI CUT b
BIAS CONT
AUDIO MUTE 2
REC PAUSE
PB+DUB
AUDIO MUTE 3
TO TUNER, AUDIO BLOCK AM-3 BOARD CN502
REC PAUSE
HI CUT a
HI CUT b
FF/REW
REEL STOP
REEL FWD
REEL LOW
MC
V MUTE
CAP FWD
CUE/REV
REC
PB+DUB
CAP STOP
DRUM STOP
C RMT
REEL CUE/REV
REC·PAUSE
PINCH S
REC
SW-25 BOARD
S611 TONE
S612 INPUT SELECT
TUNER
LINE
TRACKING
RV611 100k
SW 5V
GND (E)
GND (M)
SW 12V (E)
SW 12V (M)
C·INS
CN609 (WHT)
TO POWER SUPPLY, TIMER BLOCK M BOARD CN301
CN611 (BLK)
PINCH PL (C)
PINCH PL (S)
PINCH PL (H)
PM902 PINCH PLUNGER
CN610 (YEL)
UN BRK PL (C)
UN BRK PL (S)
UN BRK PL (H)
PM901 BRAKE PLUNGER
SS-
REC·PAUSE
SW 12V (M)
GND (M)
SW 12V (E)
SW 5V (E)
GND (E)
RESET
CAP ROT
DRUM ROT
LOAD
UNLOAD
REEL STOP
REEL FWD
REEL LOW
REEL CUE/REV
PINCH S
TOP/END
CUE/REV
FF/REW
CAP STOP
DRUM STOP
CAP FWD
REC/PAUSE
VD/CTL
REEL FG
HI CUT b
HI CUT a
MC
V MUTE
PB+DUB
REC
AV CONT
C.RMT
REC
TO VIDEO BLOCK YC-25 BOARD CN004
CN306 (YEL)
C. RMT.
AV. CONT
REC
PB+DUB
AUDIO SEL
V MUTE
VIDEO SEL
CN309 (BLK)
HI CUT a
HI CUT b
AUDIO SEL
VIDEO SEL
SW 12V (E)
SW 5V
TRACON
TO VIDEO BLOCK YC-25 BOARD CN008
CN312 (RED)
MC
RF SW P
V.B.P
COMP SYNC
CTL
GND
4.43MHz REF
C·INS
L903 CTL HEAD
CN307 (WHT)
CTL HEAD (X)
CTL HEAD (Y)
no mark : REC mode
RD-7 BOARD
D001 GP-2S02A
[ ] : REV mode
RD-6 BOARD
D001 GP-2S02A

ISE FILTER) **CAPSTAN MOTOR** (CAPSTAN MOTOR) **REEL MOTOR** (REEL MOTOR) **CS-3** (CASSETTE ON SWITCH) **CS-4** (CASSETTE IN SWITCH)

| M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | A1 | B1 |

series, CS-3, CS-4 BOARD: 9300 series –

- All resi
- All cap 50V o
- All var unless

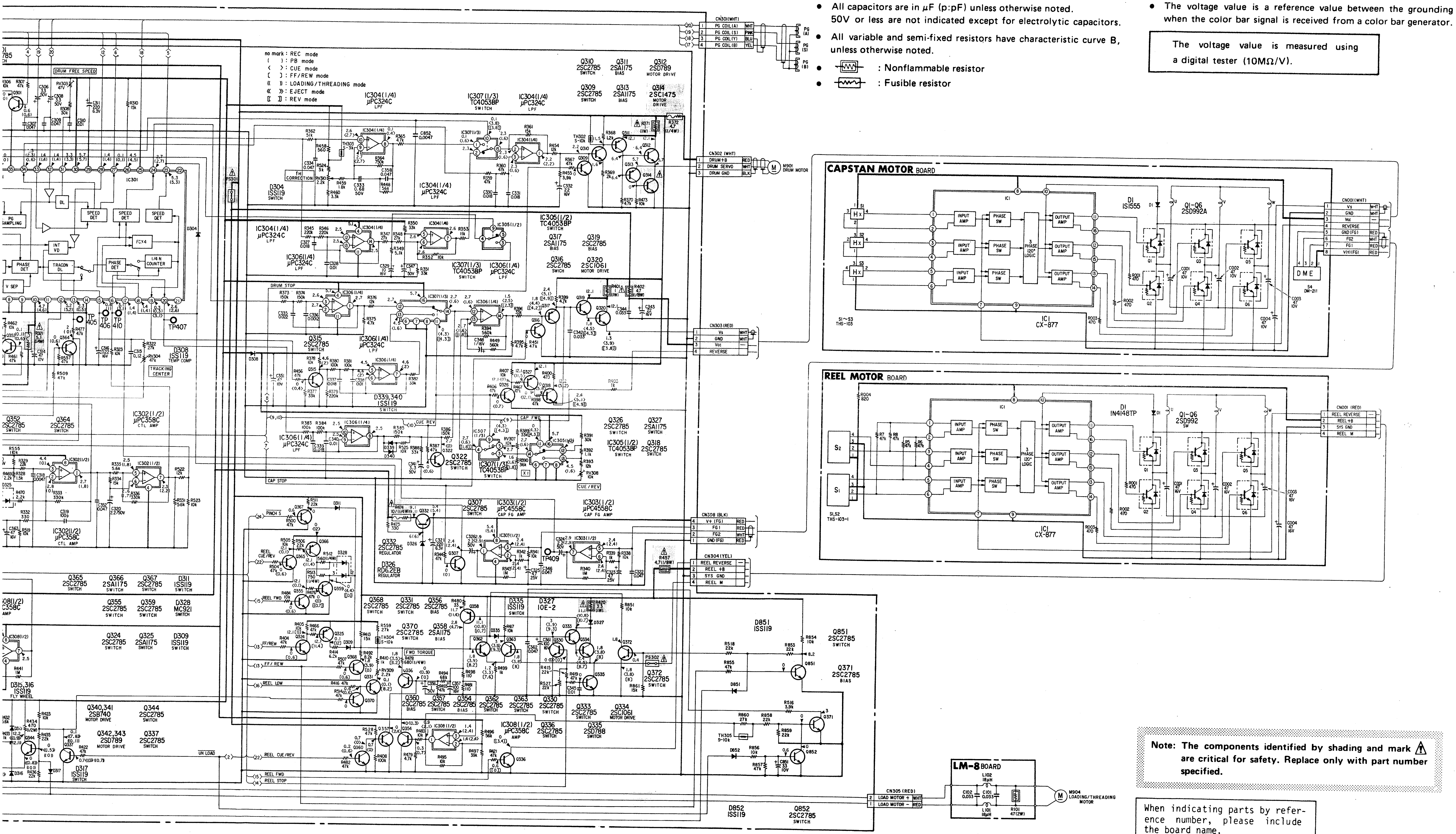

SS-16 BOARD(1/2)-SERVO-
IC301 CX-194B SERVO
Q301 2SC2785 SWITCH
Q345 2SD789 REGULATOR
D301 RD10EB2 REGULATOR
TP401
TP402
TP403
TP404
TP405
TP406
TP407
TP409
TP410
SWITCH POSITION A
SWITCH POSITION B
DRUM FREE SPEED
D302 MC921 SWITCH
DL
SWP OSC
PG SAMPLING
SPEED DET
INT VD
FCY4
1/4 N COUNTER
V SEP
NOISE CLIPPER
P2 LOOP
PHASE DET
TRACON DL
no mark : REC mode
( ) : PB mode
< > : CUE mode
[ ] : FF/REW mode
(( )) : LOADING/THREADING mode
<< >> : EJECT mode
[[ ]] : REV mode
IC304(1/4) μPC324C LPF
IC307(1/3) TC4053BP SWITCH
IC305(1/2) TC4053BP SWITCH
IC306(1/4) μPC324C LPF
IC302(1/2) μPC358C CTL AMP
IC303(1/2) μPC4558C CAP FG AMP
IC308(1/2) μPC358C AMP
Q310 2SC2785 SWITCH
Q311 2SA1175 BIAS
Q312 2SD789 MOTOR DRIVE
Q314 2SC1475 MOTOR DRIVE
M901 DRUM MOTOR
CN302 (WHT)
DRUM +B
DRUM SERVO
DRUM GND
CN301 (WHT)
PG COIL(A)
PG COIL(S)
PG COIL(Y)
PG COIL(B)
CAPST
REEL M
CN303 (RED)
Vs
GND
Vcc
REVERSE
CN208 (BLK)
V+ (FG)
FG1
FG2
GND (FG)
CN304 (YEL)
REEL REVERSE
REEL +B
SYS GND
REEL M
CN615 (WHT)
TO TUNER, AUDIO BLOCK AM-3 BOARD CN502
SW-25 BOARD
S611
S612 INPUT SELECT
TUNER
LINE
TRACKING
RV611 100k
Q626 2SA874 SWITCH
Q621-625 2SC2785 CAMERA PAUSE
TO VIDEO BLOCK YC-25 BOARD CN004
CN306 (YEL)
CN309 (BLK)
CN312 (RED)
TO VIDEO BLOCK YC-25 BOARD CN008
CN609 (WHT)
TO POWER SUPPLY, TIMER BLOCK M BOARD CN301
L903 CTL HEAD
CN307 (WHT)
CTL HEAD(X)
CTL HEAD(Y)
Q620 2SD1164 PLUNGER DRIVE
Q616 2SD1164 PLUNGER DRIVE
CN611 (BLK)
PINCH PL (C)
PINCH PL (S)
PINCH PL (H)
PM902 PINCH PLUNGER
CN610 (YEL)
UN BRK PL (C)
UN BRK PL (S)
UN BRK PL (H)
PM901 BRAKE PLUNGER
RD-7 BOARD
D001 GP-2S02A
RD-6 BOARD
D001 GP-2S02A
[ ] : REV mode
CN310 (WHT)
T REEL FG
CN311 (RED)
S REEL FG
D341 TLR123 LEVEL SHIFT
Q304 2SC2785 SWITCH
Q305 2SA1175 SWITCH
Q306 2SC2785 SWITCH
Q373 2SC2785 SWITCH
D306 MC921 SWITCH
D325 MC911 SWITCH
Q349 2SA1175 SWITCH
Q346 2SC2785 SWITCH
Q347 2SC2785 SWITCH
Q348 2SC2785 SWITCH
D315,316 ISS119 FLY WHEEL
Q338 2SC2785 SWITCH
Q339 2SC2785 SWITCH
D313,314 ISS119 FLY WHEEL
Q340,341 2SC2785 MOTOR DRIVE
Q342,343 2SD789 MOTOR DRIVE
Q344 2SC2785 SWITCH
Q337 2SC2785 SWITCH
D317 ISS119 SWITCH
Q308 ISS119 TEMP COMP
TRACKING CENTER
Q302 2SC2785 SWITCH
Q303 2SC2785 SWITCH
Q352 2SC2785 SWITCH
Q364 2SC2785 SWITCH
Q365 2SC2785 SWITCH
Q366 2SA1175 SWITCH
Q367 2SC2785 SWITCH
D311 ISS119 SWITCH
Q355 2SC2785 SWITCH
Q359 2SC2785 SWITCH
D328 MC921 SWITCH
Q324 2SC2785 SWITCH
Q325 2SA1175 SWITCH
D309 ISS119 SWITCH
D304 ISS119 SWITCH
D339,340 ISS119 SWITCH
Q315 2SC2785 SWITCH
Q316 2SC2785 SWITCH
Q317 2SA1175 BIAS
Q319 2SC2785 BIAS
Q320 2SC1061 MOTOR DRIVE
Q326 2SC2785 SWITCH
Q327 2SA1175 SWITCH
Q318 2SC2785 SWITCH
Q322 2SC2785 SWITCH
Q307 2SC2785 SWITCH
Q332 2SC2785 REGULATOR
D326 RD6.2EB REGULATOR
Q368 2SC2785 SWITCH
Q331 2SC2785 SWITCH
Q356 2SA1175 BIAS
D335 ISS119 SWITCH
D327 10E-2
Q370 2SC2785 SWITCH
Q358 2SA1175 BIAS
Q360 2SC2785 BIAS
Q357 2SC2785 SWITCH
Q354 2SC2785 BIAS
Q362 2SC2785 SWITCH
Q363 2SC2785 SWITCH
Q330 2SC2785 SWITCH
Q333 2SC2785 SWITCH
Q334 2SC1061 MOTOR DRIVE
Q336 2SC2785 SWITCH
Q335 2SD788 SWITCH
Q372 2SC2785 SWITCH
D851 ISS119
Q851 2SC2785 SWITCH
Q852 2SC2785 SWITCH
D852 ISS119
TH305
UN LOAD
LOAD
TOP/END
FWD TORQUE
CAP FWD
CUE/REV
CAP STOP
DRUM STOP
PINCH S
REEL FWD
FF/REW
REEL LOW
REEL CUE/REV
REEL STOP
S1, S2 THS-103-1
S1~S3 THS-103

CS-3 (CASSETTE ON SWITCH) **CS-4** (CASSETTE IN SWITCH)

T | U | V | W | X | Y | Z | A1 | B1 | C1 | D1 | E1 | F1 | G1 | H1 | I1

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- : Nonflammable resistor
- : Fusible resistor
- ━━━ : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.

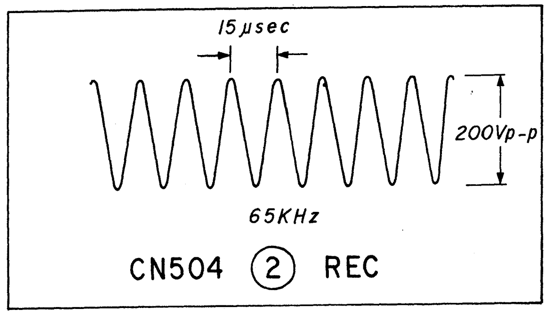
The voltage value is measured using a digital tester (10MΩ/V).


no mark : REC mode
( ) : PB mode
< > : CUE mode
[ ] : FF/REW mode
⟦ ⟧ : LOADING/THREADING mode
« » : EJECT mode
[[ ]] : REV mode
DRUM FREE SPEED
IC301
PG SAMPLING
DL
SPEED DET
PHASE DET
INT VD
TRACON DL
FCY4
1/4 N COUNTER
V SEP
TRACKING CENTER
TP405
TP410
TP407
IC304(1/4) μPC324C LPF
IC307(1/3) TC4053BP SWITCH
IC305(1/2) TC4053BP SWITCH
IC306(1/4) μPC324C LPF
IC302(1/2) μPC358C CTL AMP
IC303(1/2) μPC4558C CAP FG AMP
IC308(1/2) μPC358C AMP
Q310 2SC2785 SWITCH
Q311 2SA1175 BIAS
Q312 2SD789 MOTOR DRIVE
Q309 2SC2785 SWITCH
Q313 2SA1175 BIAS
Q314 2SC1475 MOTOR DRIVE
Q317 2SA1175 BIAS
Q319 2SC2785 BIAS
Q316 2SC2785 SWITCH
Q320 2SC1061 MOTOR DRIVE
Q315 2SC2785 SWITCH
Q326 2SC2785 SWITCH
Q327 2SA1175 SWITCH
Q318 2SC2785 SWITCH
Q322 2SC2785 SWITCH
Q307 2SC2785 SWITCH
Q332 2SC2785 REGULATOR
D326 RD6.2EB REGULATOR
D304 ISS119 SWITCH
D339,340 ISS119 SWITCH
D308 ISS119 TEMP COMP
TH CORRECTION
DRUM STOP
CUE REV
CAP FWD
CUE/REV
CAP STOP
PINCH S
REEL CUE/REV
REEL FWD
FF/REW
REEL LOW
UN LOAD
REEL CUE/REV
REEL FWD
REEL STOP
FWD TORQUE
TP409
Q352 2SC2785 SWITCH
Q364 2SC2785 SWITCH
Q365 2SC2785 SWITCH
Q366 2SA1175 SWITCH
Q367 2SC2785 SWITCH
D311 ISS119 SWITCH
Q355 2SC2785 SWITCH
Q359 2SC2785 SWITCH
D328 MC921 SWITCH
Q324 2SC2785 SWITCH
Q325 2SA1175 SWITCH
D309 ISS119 SWITCH
D315,316 ISS119 FLY WHEEL
Q340,341 2SB740 MOTOR DRIVE
Q344 2SC2785 SWITCH
Q342,343 2SD789 MOTOR DRIVE
Q337 2SC2785 SWITCH
D317 ISS119 SWITCH
Q368 2SC2785 SWITCH
Q331 2SC2785 SWITCH
Q356 2SC2785 BIAS
D335 ISS119 SWITCH
D327 10E-2
Q370 2SC2785 SWITCH
Q358 2SA1175 BIAS
Q360 2SC2785 BIAS
Q357 2SC2785 SWITCH
Q354 2SC2785 BIAS
Q362 2SC2785 SWITCH
Q363 2SC2785 SWITCH
Q330 2SC2785 SWITCH
Q333 2SC2785 SWITCH
Q334 2SC1061 MOTOR DRIVE
Q336 2SC2785 SWITCH
Q335 2SD788 SWITCH
Q372 2SC2785 SWITCH
PS301
PS302
D851 ISS119
Q851 2SC2785 SWITCH
Q371 2SC2785 BIAS
TH305 S-10k
D852 ISS119
Q852 2SC2785 SWITCH
CN301 (WHT)
PG COIL (A)
PG COIL (S)
PG COIL (Y)
PG COIL (B)
PG (A)
PG (S)
PG (B)
CN302 (WHT)
DRUM +B
DRUM SERVO
DRUM GND
M901 DRUM MOTOR
CN303 (RED)
Vs
GND
Vcc
REVERSE
CN308 (BLK)
V+ (FG)
FG1
FG2
GND (FG)
CN304 (YEL)
REEL REVERSE
REEL +B
SYS GND
REEL M
CN305 (RED)
LOAD MOTOR +
LOAD MOTOR −
CAPSTAN MOTOR BOARD
CN001 (WHT)
Vs
GND
Vcc
REVERSE
GND (FG)
FG2
FG1
V(+) (FG)
IC1 CX-877
INPUT AMP
PHASE SW
3 PHASE 120° LOGIC
OUTPUT AMP
D1 IS1555
Q1-Q6 2SD992A
DME
S4 DM-211
S1~S3 THS-103
REEL MOTOR BOARD
CN001 (RED)
REEL REVERSE
REEL +B
SYS GND
REEL M
D1 IN4148TP
Q1-Q6 2SD992 SW
S1, S2 THS-103-1
IC1 CX-877
LM-8 BOARD
L102 18μH
L101 18μH
C102 0.033
C101 0.033
R101 47(2W)
M904 LOADING/THREADING MOTOR

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

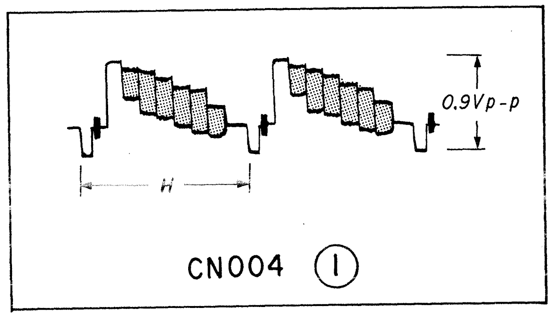
When indicating parts by reference number, please include the board name.

AM-3 BOARD



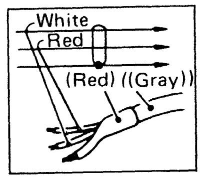
CN504 ② REC

TU-39 BOARD



CN004 ①

- Color code of sleeving over the end of the jacket.


White
Red
(Red) ((Gray))

- ○— indicates a lead wire mounted on the component side.
- ●— indicates a lead wire mounted on the printed side.
- ▨ Soldering side
- ▨ B + pattern
- ■ B − pattern

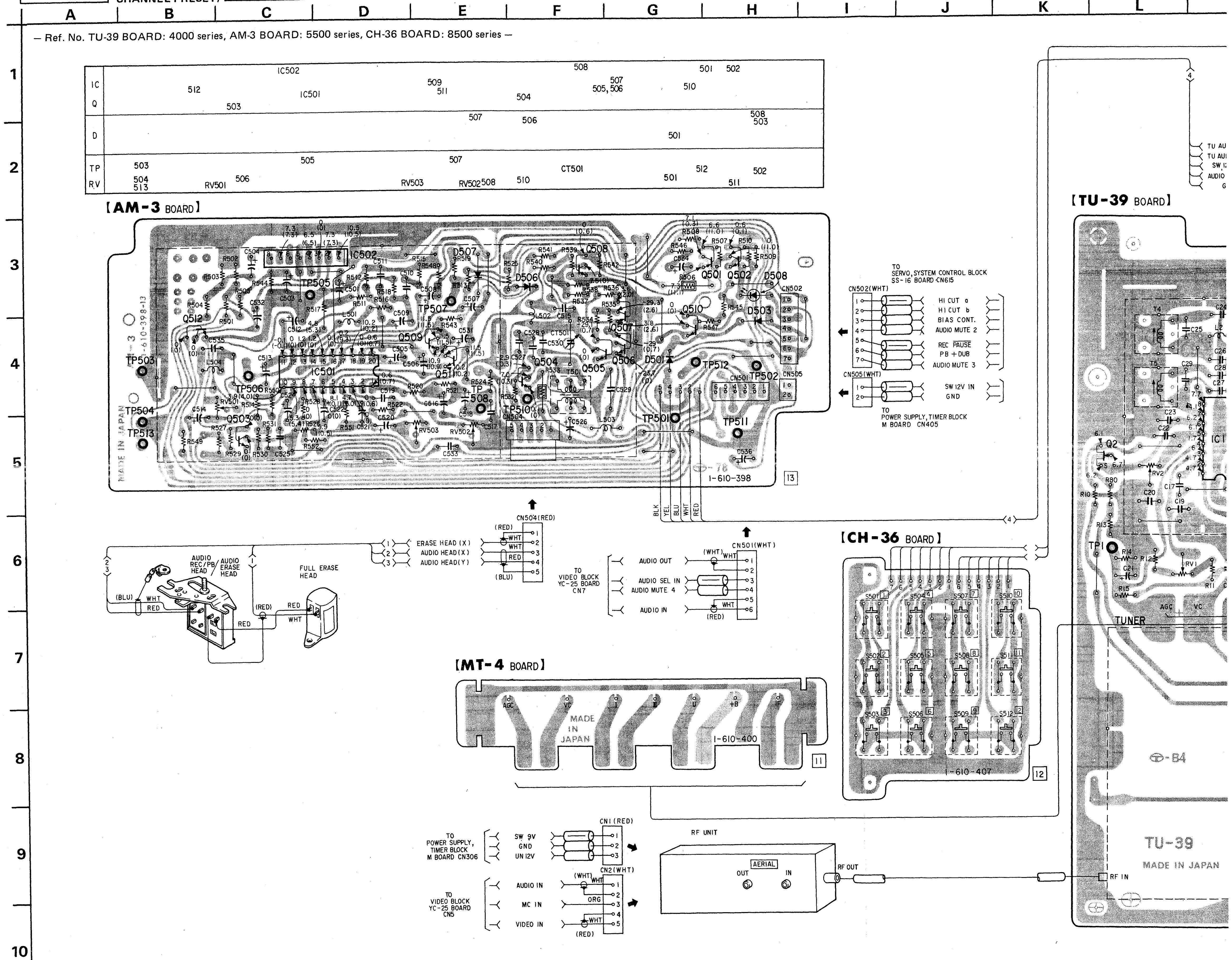
TUNER, AUDIO TUNER, AUDIO

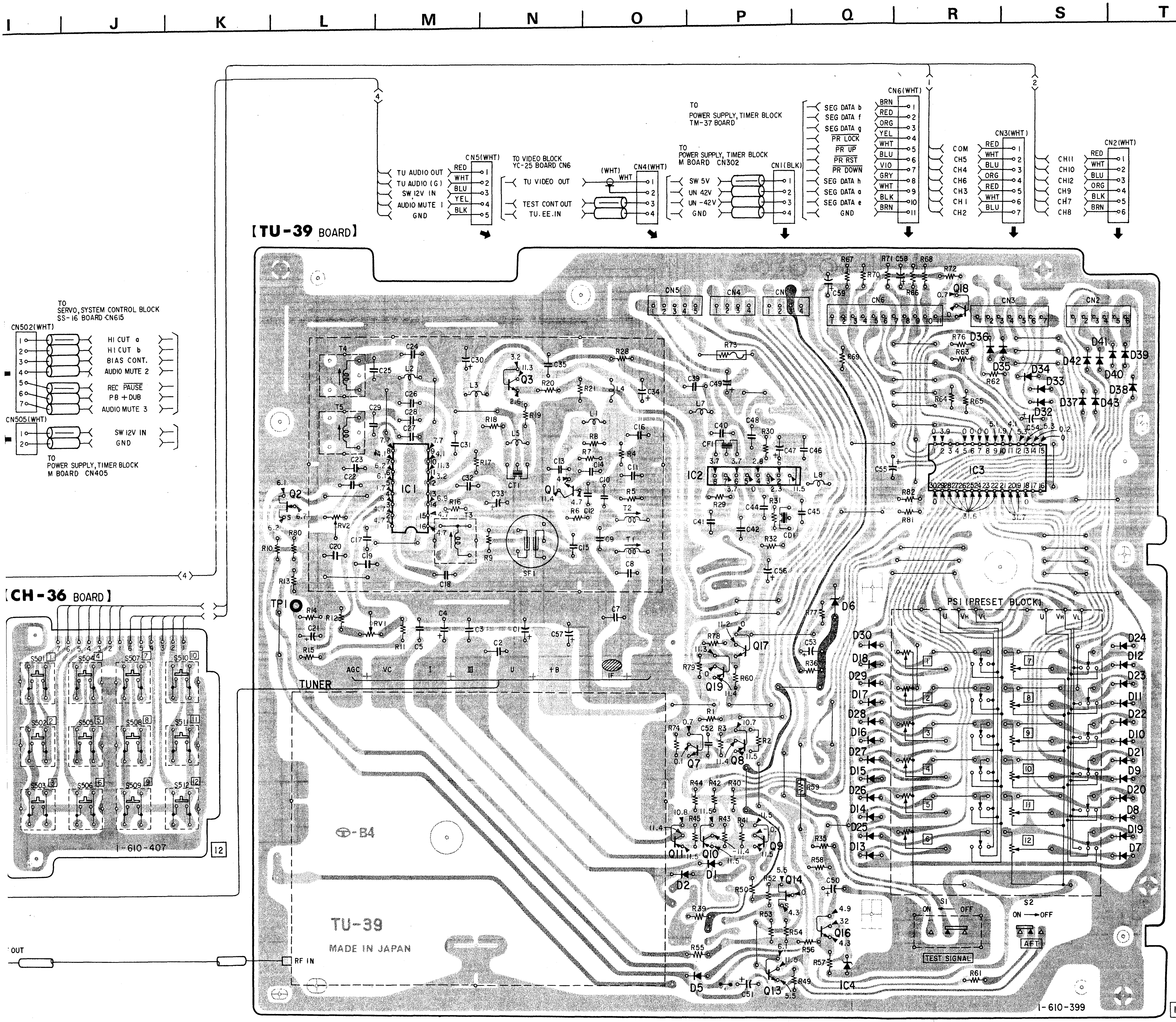
TU-39 (VIF, SIF, AFC, CHANNEL PRESET) **AM-3** (AUDIO RECORD/ PLAY BACK PROCESS) **CH-36** (CHANNEL SWITCH) **MT-4** (INTERMEDIATION)

– Ref. No. TU-39 BOARD: 4000 series, AM-3 BOARD: 5500 series, CH-36 BOARD: 8500 series –

	A	B	C	D	E	F	G	H
IC Q		512	IC502 IC501 503		509 511	508 504	507 505, 506 510	501 502
D					507	506	501	508 503
TP RV	503 504 513	RV501	506 505		RV503 507 RV502 508	510 CT501	501	512 502 511

[AM-3 BOARD]

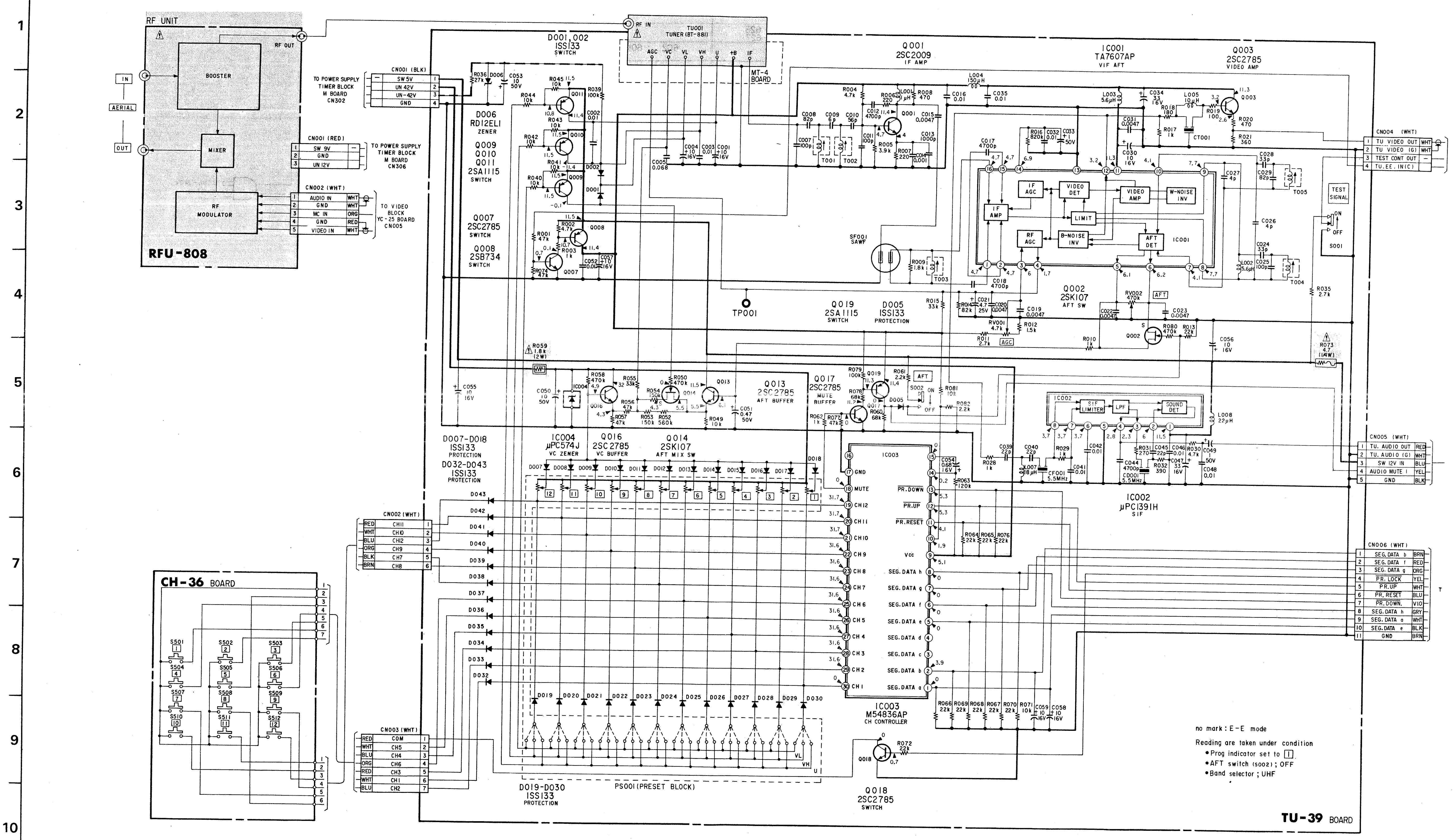

A
B
C
D
E
F
G
H
I
J
K
L
1
2
3
4
5
6
7
8
9
10
IC502
IC501
TP503
TP504
TP513
TP505
TP506
TP507
TP508
TP510
TP501
TP502
TP511
TP512
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
Q511
Q512
D501
D503
D506
D507
D508
CT501
RV501
RV502
RV503
1-610-398
13
MADE IN JAPAN
TO SERVO, SYSTEM CONTROL BLOCK SS-16 BOARD CN615
CN502(WHT)
HI CUT a
HI CUT b
BIAS CONT.
AUDIO MUTE 2
REC PAUSE
PB + DUB
AUDIO MUTE 3
CN505(WHT)
SW 12V IN
GND
TO POWER SUPPLY, TIMER BLOCK M BOARD CN405
BLK
YEL
BLU
WHT
RED
CN504(RED)
(RED)
WHT
WHT
RED
(BLU)
ERASE HEAD (X)
AUDIO HEAD (X)
AUDIO HEAD (Y)
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
(BLU)
WHT
RED
(RED)
RED
WHT
CN501(WHT)
AUDIO OUT
AUDIO SEL IN
AUDIO MUTE 4
AUDIO IN
TO VIDEO BLOCK YC-25 BOARD CN7
(WHT)
WHT
WHT
(RED)
[CH-36 BOARD]
S501
S502
S503
S504
S505
S506
S507
S508
S509
S510
S511
S512
1-610-407
12
[MT-4 BOARD]
AGC
VC
+B
MADE IN JAPAN
1-610-400
11
[TU-39 BOARD]
TU AU
TU AU
SW
AUDIO
G
T4
T5
C25
C26
C28
C29
C27
C23
C22
C24
Q2
IC1
R80
R10
R13
RV2
C20
C17
C19
TP1
R14
R12
C21
RV1
R15
R11
AGC
VC
TUNER
B4
TU-39
MADE IN JAPAN
RF IN
RF UNIT
AERIAL
OUT
IN
RF OUT
CN1(RED)
SW 9V
GND
UN 12V
TO POWER SUPPLY, TIMER BLOCK M BOARD CN306
CN2(WHT)
AUDIO IN
MC IN
VIDEO IN
(WHT)
WHT
ORG
WHT
(RED)
TO VIDEO BLOCK YC-25 BOARD CN5


I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
【TU-39 BOARD】
【CH-36 BOARD】
TO SERVO, SYSTEM CONTROL BLOCK SS-16 BOARD CN615
CN502(WHT)
HI CUT a
HI CUT b
BIAS CONT.
AUDIO MUTE 2
REC PAUSE
PB + DUB
AUDIO MUTE 3
CN505(WHT)
SW 12V IN
GND
TO POWER SUPPLY, TIMER BLOCK M BOARD CN405
CN5(WHT)
TU AUDIO OUT
TU AUDIO (G)
SW 12V IN
AUDIO MUTE 1
GND
TO VIDEO BLOCK YC-25 BOARD CN6
CN4(WHT)
TU VIDEO OUT
TEST CONT OUT
TU. EE. IN
TO POWER SUPPLY, TIMER BLOCK M BOARD CN302
CN1(BLK)
SW 5V
UN 42V
UN -42V
GND
TO POWER SUPPLY, TIMER BLOCK TM-37 BOARD
CN6(WHT)
SEG DATA b
SEG DATA f
SEG DATA g
PR LOCK
PR UP
PR RST
PR DOWN
SEG DATA h
SEG DATA a
SEG DATA e
GND
CN3(WHT)
COM
CH5
CH4
CH6
CH3
CH1
CH2
CN2(WHT)
CH11
CH10
CH12
CH9
CH7
CH8
RED
WHT
BLU
YEL
BLK
BRN
ORG
VIO
GRY
IC1
IC2
IC3
IC4
Q1
Q2
Q3
Q7
Q8
Q9
Q10
Q11
Q13
Q14
Q16
Q17
Q18
Q19
TP1
RV1
RV2
SF1
CF1
CD1
T1
T2
T3
T4
T5
PS1 (PRESET BLOCK)
TUNER
AGC
VC
IF
+B
RF IN
OUT
S1
ON
OFF
S2
ON → OFF
AFT
TEST SIGNAL
TU-39
MADE IN JAPAN
1-610-399
1-610-407
12
14

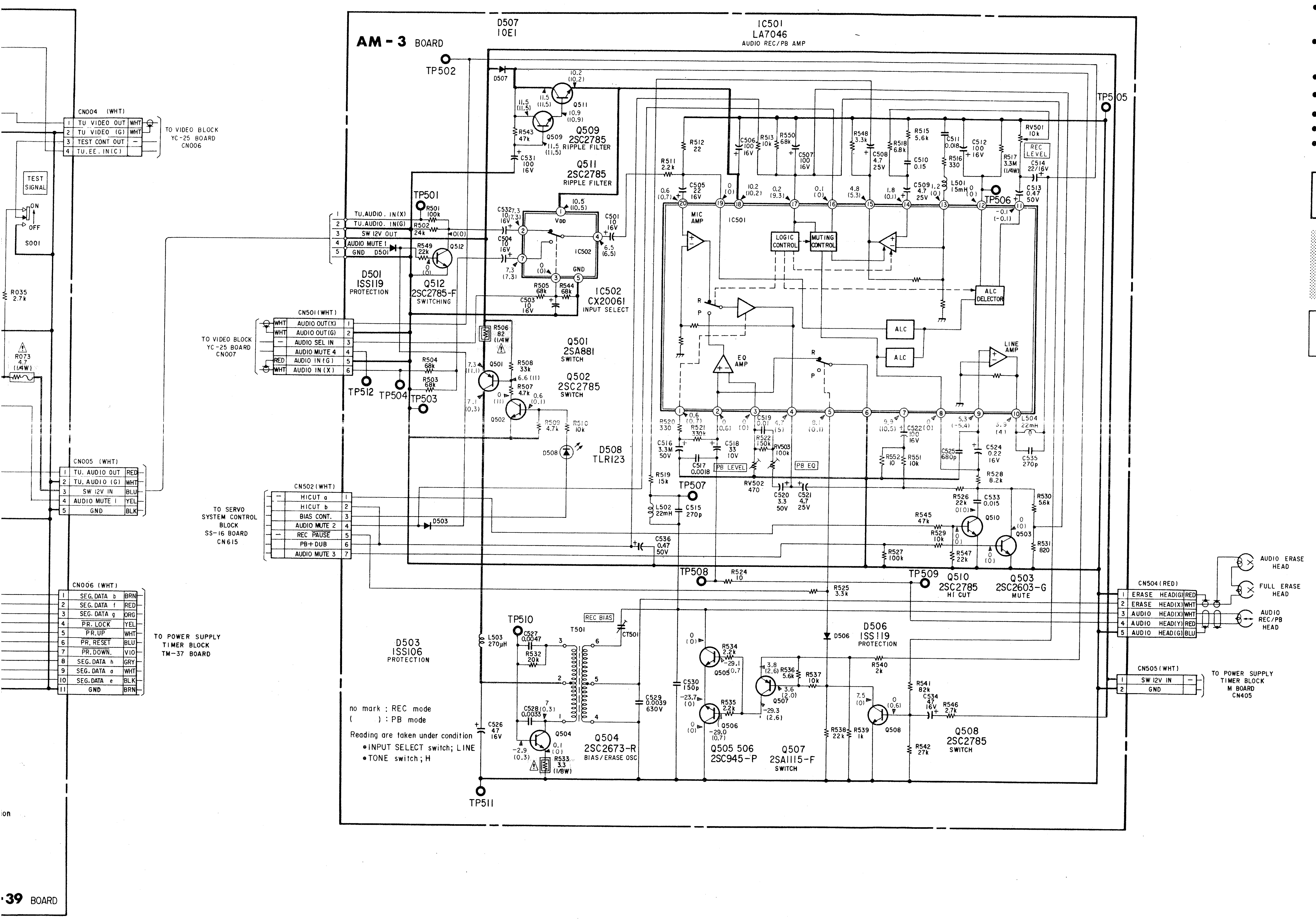
IC·Q	D	TP·RV
18		
	36,35 42,41 40,39 34 33 32 37 43 38	
3		
2 IC1 1 IC2 IC3		
		RV2
	6	1 RV1
17	30 24	
19	18 12	
	29 23	
	17 11	
	28 22	
7,8	16 10	
	27 21	
	15 9	
	26 20	
	14 8	
11,10,9	25 19	
	10,13 7 1 2	
14		
16		
13 IC4	5	

TU-39 (VIF, SIF, AFC, CHANNEL PRESET) **AM-3** (AUDIO RECORD/ PLAY BACK PROCESS) **CH-36** (CHANNEL SWITCH) **MT-4** (INTERMEDIATION)

– Ref. No. TU-39 BOARD: 4000 series, AM-3 BOARD: 5500 series, CH-36 BOARD: 8500 series –


A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
RF UNIT
BOOSTER
MIXER
RF MODULATOR
RF OUT
IN
AERIAL
OUT
RFU-808
CN001 (BLK)
TO POWER SUPPLY TIMER BLOCK M BOARD CN302
CN001 (RED)
TO POWER SUPPLY TIMER BLOCK M BOARD CN306
CN002 (WHT)
TO VIDEO BLOCK YC-25 BOARD CN005
TU001 TUNER (BT-881)
MT-4 BOARD
D001, 002 1SS133 SWITCH
D006 RD12EL1 ZENER
Q009 Q010 Q011 2SA1115 SWITCH
Q007 2SC2785 SWITCH
Q008 2SB734 SWITCH
Q001 2SC2009 IF AMP
IC001 TA7607AP VIF AFT
Q003 2SC2785 VIDEO AMP
IF AGC
VIDEO DET
VIDEO AMP
W-NOISE INV
IF AMP
LIMIT
RF AGC
B-NOISE INV
AFT DET
SF001 SAWF
TP001
Q019 2SA1115 SWITCH
D005 1SS133 PROTECTION
Q002 2SK107 AFT SW
CN004 (WHT)
TU VIDEO OUT
TU VIDEO (G)
TEST CONT OUT
TU.EE. INIC)
TEST SIGNAL
S001
IC004 µPC574J VC ZENER
Q016 2SC2785 VC BUFFER
Q014 2SK107 AFT MIX SW
Q013 2SC2785 AFT BUFFER
Q017 2SC2785 MUTE BUFFER
AFT
S002
IC002
SIF LIMITER
LPF
SOUND DET
IC002 µPC1391H SIF
CN005 (WHT)
TU. AUDIO OUT
TU. AUDIO (G)
SW 12V IN
AUDIO MUTE I
GND
D007-D018 1SS133 PROTECTION
D032-D043 1SS133 PROTECTION
CN002 (WHT)
IC003 M54836AP CH CONTROLLER
CN006 (WHT)
SEG. DATA b
SEG. DATA f
SEG. DATA g
PR. LOCK
PR. UP
PR. RESET
PR. DOWN
SEG. DATA h
SEG. DATA a
SEG. DATA e
GND
CH-36 BOARD
S501
S502
S503
S504
S505
S506
S507
S508
S509
S510
S511
S512
CN003 (WHT)
D019-D030 1SS133 PROTECTION
PS001 (PRESET BLOCK)
Q018 2SC2785 SWITCH
TU-39 BOARD

no mark : E-E mode
Reading are taken under condition
•Prog indicator set to 1
•AFT switch (S002) ; OFF
•Band selector ; UHF


AM-3 BOARD
TP502
D507
10E1
IC501
LA7046
AUDIO REC/PB AMP
Q509
2SC2785
RIPPLE FILTER
Q511
2SC2785
RIPPLE FILTER
TP505
TP501
R501 100k
R502 24k
R549 22k
Q512
2SC2785-F
SWITCHING
D501
1SS119
PROTECTION
IC502
CX20061
INPUT SELECT
VDD
GND
C501 10 16V
C503 10 16V
C504 10 16V
C532 10 16V
R505 68k
R544 68k
R543 47k
C531 100 16V
R511 2.2k
R512 22
C505 22 16V
C506 100 16V
R513 10k
R550 68k
C507 100 16V
R548 3.3k
C508 4.7 25V
R518 6.8k
R515 5.6k
C510 0.15
C511 0.018
R516 330
C512 100 16V
R517 3.3M (1/4W)
RV501 10k
REC LEVEL
C514 22/16V
C513 0.47 50V
C509 4.7 25V
L501 15mH
TP506
MIC AMP
LOGIC CONTROL
MUTING CONTROL
ALC DELECTOR
ALC
ALC
EQ AMP
LINE AMP
R
P
CN004 (WHT)
1 TU VIDEO OUT WHT
2 TU VIDEO (G) WHT
3 TEST CONT OUT
4 TU.EE. IN(C)
TO VIDEO BLOCK YC-25 BOARD CN006
TEST SIGNAL
ON
OFF
S001
R035 2.7k
R073 4.7 (1/4W)
1 TU.AUDIO. IN(X)
2 TU.AUDIO. IN(G)
3 SW 12V OUT
4 AUDIO MUTE 1
5 GND
CN501 (WHT)
WHT 1 AUDIO OUT(X)
WHT 2 AUDIO OUT(G)
3 AUDIO SEL IN
4 AUDIO MUTE 4
RED 5 AUDIO IN(G)
WHT 6 AUDIO IN(X)
TO VIDEO BLOCK YC-25 BOARD CN007
TP512
TP504
TP503
R506 82 (1/4W)
R504 68k
R503 68k
R508 33k
R507 4.7k
R509 4.7k
R510 10k
Q501
2SA881
SWITCH
Q502
2SC2785
SWITCH
D508
TLR123
CN005 (WHT)
1 TU. AUDIO OUT RED
2 TU. AUDIO (G) WHT
3 SW 12V IN BLU
4 AUDIO MUTE 1 YEL
5 GND BLK
CN502 (WHT)
1 HICUT a
2 HICUT b
3 BIAS CONT.
4 AUDIO MUTE 2
5 REC PAUSE
6 PB+DUB
7 AUDIO MUTE 3
TO SERVO SYSTEM CONTROL BLOCK SS-16 BOARD CN615
D503
R520 330
R521 330
C516 3.3M 50V
C518 33 10V
C517 0.0018
PB LEVEL
R519 15k
TP507
L502 22mH
C515 270p
C519 0.01
R522 150k
RV503 100k
PB EQ
RV502 470
C520 3.3 50V
C521 4.7 25V
C522 100 16V
C525 680p
R552 10
R551 10k
C524 0.22 16V
L504 22mH
C535 270p
R528 8.2k
R526 22k
C533 0.015
R545 47k
R529 10k
R530 5.6k
Q510
Q503
R531 820
R527 100k
R547 22k
C536 0.47 50V
TP508
R524 10
TP509
Q510
2SC2785
HI CUT
Q503
2SC2603-G
MUTE
R525 3.3k
CN006 (WHT)
1 SEG. DATA b BRN
2 SEG. DATA f RED
3 SEG. DATA g ORG
4 PR. LOCK YEL
5 PR. UP WHT
6 PR. RESET BLU
7 PR. DOWN. VIO
8 SEG. DATA h GRY
9 SEG. DATA a WHT
10 SEG. DATA e BLK
11 GND BRN
TO POWER SUPPLY TM-37 BOARD
TP510
REC BIAS
T501
CT501
L503 270μH
C527 0.0047
R532 20k
C528 0.0033
C529 0.0039 630V
C530 150p
C526 47 16V
Q504
R533 33 (1/8W)
Q504
2SC2673-R
BIAS/ERASE OSC
D503
1SS106
PROTECTION
R534 2.2k
R535 2.2k
Q505
Q506
R536 5.6k
R537 10k
Q507
D506
1SS119
PROTECTION
R540 2k
R538 22k
R539 1k
Q508
R541 82k
C534 47 16V
R546 2.7k
R542 27k
Q505 506
2SC945-P
Q507
2SA1115-F
SWITCH
Q508
2SC2785
SWITCH
TP511
CN504 (RED)
1 ERASE HEAD(G) RED
2 ERASE HEAD(X) WHT
3 AUDIO HEAD(X) WHT
4 AUDIO HEAD(Y) RED
5 AUDIO HEAD(G) BLU
AUDIO ERASE HEAD
FULL ERASE HEAD
AUDIO REC/PB HEAD
CN505 (WHT)
1 SW 12V IN
2 GND
TO POWER SUPPLY TIMER BLOCK M BOARD CN405
no mark : REC mode
( ) : PB mode
Reading are taken under condition
•INPUT SELECT switch; LINE
•TONE switch; H
-39 BOARD

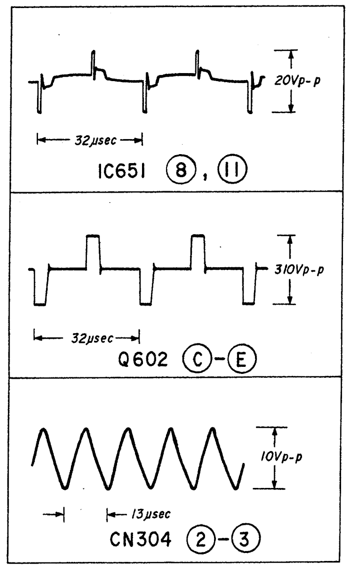
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : Nonflammable resistor
- ▭ : Fusible resistor
- ━━ : B + bus.
- ╍╍ : B – bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.

The voltage value is measured using a digital tester (10MΩ/V).

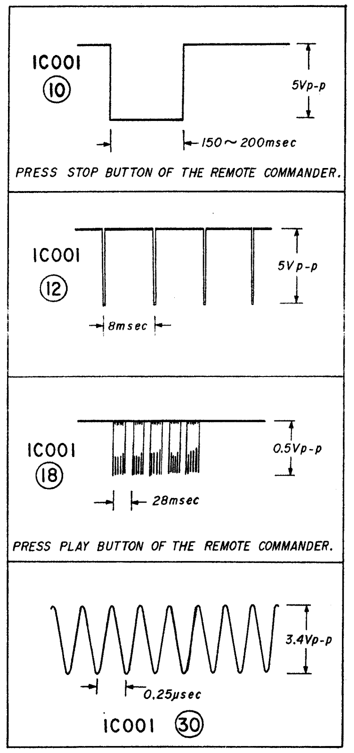
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SR-17 BOARD

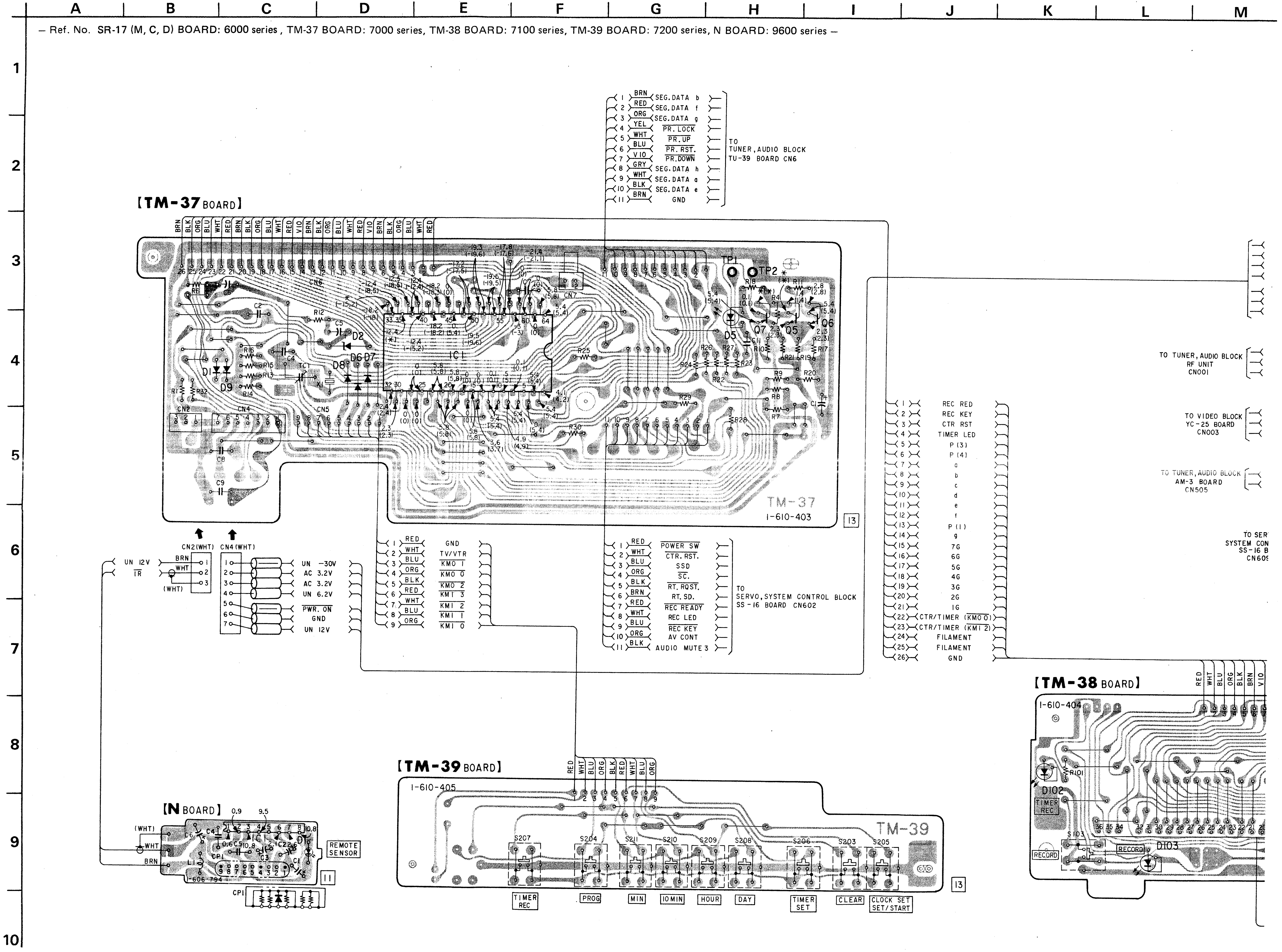


TM-37 BOARD

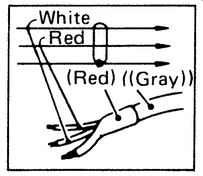


SR-17 (POWER SUPPLY REGULATOR) **TM-37** (TIMER CONTROL) **TM-38** (TIMER INDICATOR REC RESET TIMER COUNTER SWITCH) **TM-39** (TIMER PRESET SWITCH) **N** (REMOTE CONTROL SIGNAL SENSOR)

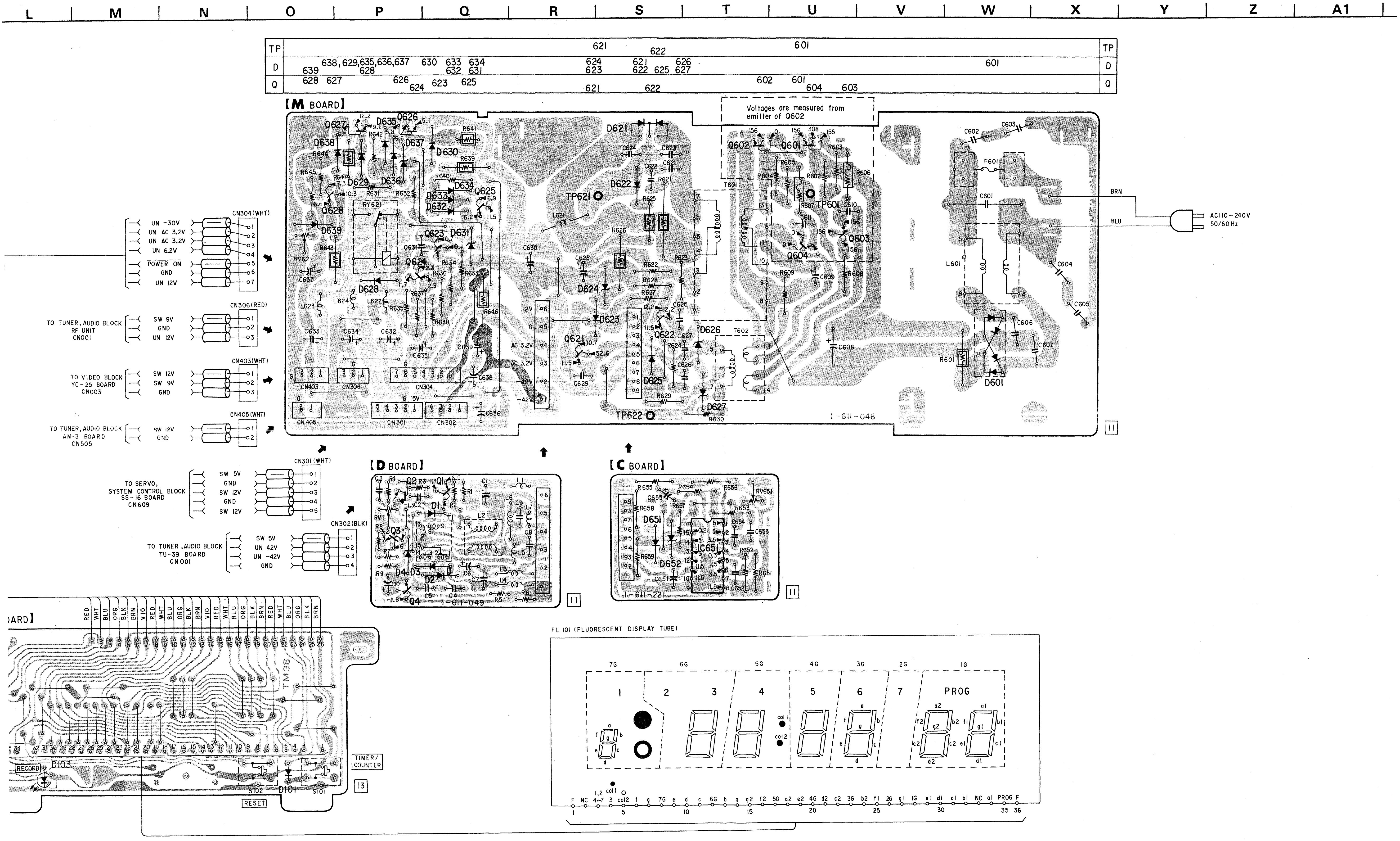
– Ref. No. SR-17 (M, C, D) BOARD: 6000 series, TM-37 BOARD: 7000 series, TM-38 BOARD: 7100 series, TM-39 BOARD: 7200 series, N BOARD: 9600 series –


A
B
C
D
E
F
G
H
I
J
K
L
M
1
2
3
4
5
6
7
8
9
10
【TM-37 BOARD】
TM-37
1-610-403
13
IC1
CN2
CN4
CN5
CN6
CN7
D1
D2
D5
D6
D7
D8
D9
Q5
Q6
Q7
TP1
TP2
X1
1 BRN SEG. DATA b
2 RED SEG. DATA f
3 ORG SEG. DATA g
4 YEL PR. LOCK
5 WHT PR. UP
6 BLU PR. RST.
7 VIO PR. DOWN
8 GRY SEG. DATA h
9 WHT SEG. DATA a
10 BLK SEG. DATA e
11 BRN GND
TO TUNER, AUDIO BLOCK TU-39 BOARD CN6
CN2 (WHT)
CN4 (WHT)
UN 12V
IR
BRN
WHT
(WHT)
UN -30V
AC 3.2V
AC 3.2V
UN 6.2V
PWR. ON
GND
UN 12V
1 RED GND
2 WHT TV/VTR
3 BLU KMO 1
4 ORG KMO 0
5 BLK KMO 2
6 RED KMI 3
7 WHT KMI 2
8 BLU KMI 1
9 ORG KMI 0
1 RED POWER SW
2 WHT CTR. RST.
3 BLU SSD
4 ORG SC.
5 BLK RT. RQST.
6 BRN RT. SD.
7 RED REC READY
8 WHT REC LED
9 BLU REC KEY
10 ORG AV CONT
11 BLK AUDIO MUTE 3
TO SERVO, SYSTEM CONTROL BLOCK SS-16 BOARD CN602
1 REC RED
2 REC KEY
3 CTR RST
4 TIMER LED
5 P (3)
6 P (4)
7 a
8 b
9 c
10 d
11 e
12 f
13 P (1)
14 g
15 7G
16 6G
17 5G
18 4G
19 3G
20 2G
21 1G
22 CTR/TIMER (KMO 0)
23 CTR/TIMER (KMI 2)
24 FILAMENT
25 FILAMENT
26 GND
TO TUNER, AUDIO BLOCK RF UNIT CN001
TO VIDEO BLOCK YC-25 BOARD CN003
TO TUNER, AUDIO BLOCK AM-3 BOARD CN505
TO SER SYSTEM CON SS-16 B CN609
【TM-38 BOARD】
1-610-404
RED
WHT
BLU
ORG
BLK
BRN
VIO
D102
TIMER REC
R101
S103
RECORD
D103
【TM-39 BOARD】
1-610-405
TM-39
13
RED
WHT
BLU
ORG
BLK
RED
WHT
BLU
ORG
S207
S204
S211
S210
S209
S208
S206
S203
S205
TIMER REC
PROG
MIN
10MIN
HOUR
DAY
TIMER SET
CLEAR
CLOCK SET SET/START
【N BOARD】
0.9
9.5
(WHT)
WHT
BRN
IC1
CP1
L1
1-606-794
11
REMOTE SENSOR

- Color code of sleeving over the end of the jacket.


White
Red
(Red) ((Gray))

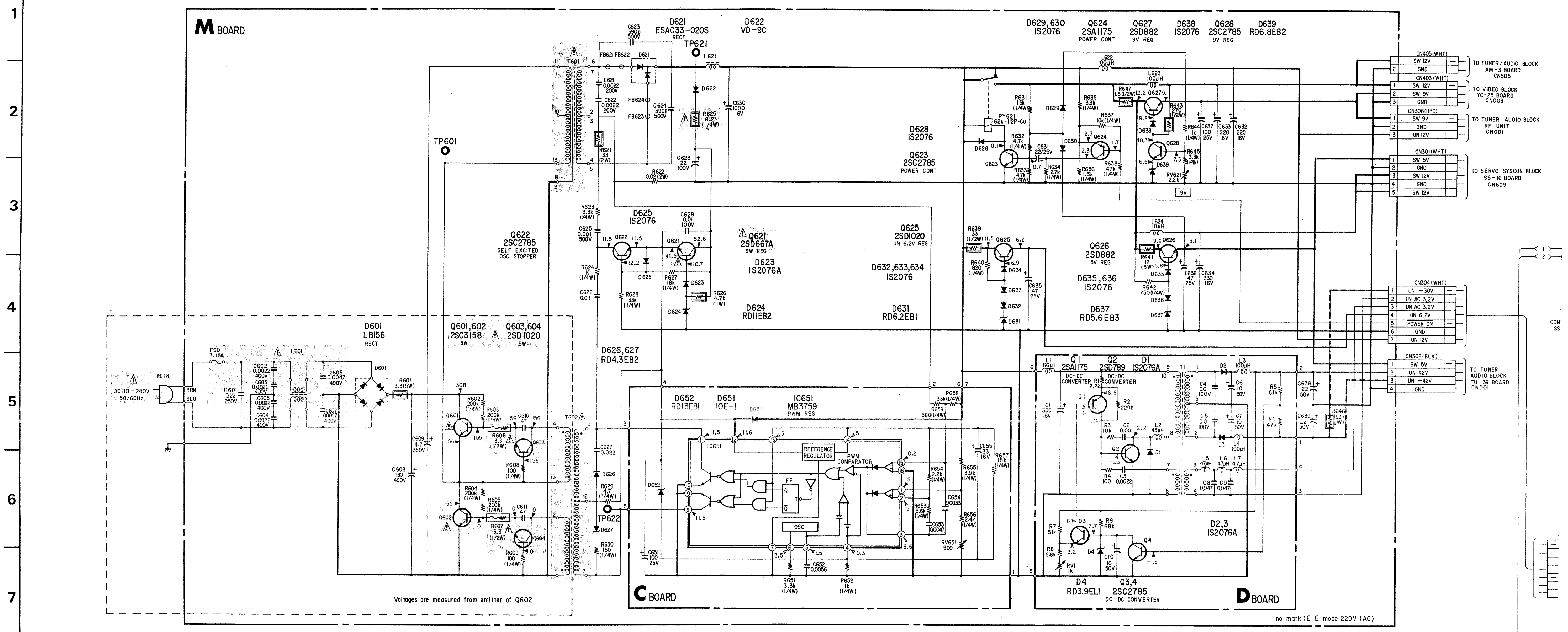
- ○— indicates a lead wire mounted on the component side.
- ●— indicates a lead wire mounted on the printed side.
- ▨ Soldering side
- ▨ B + pattern
- ▨ B – pattern

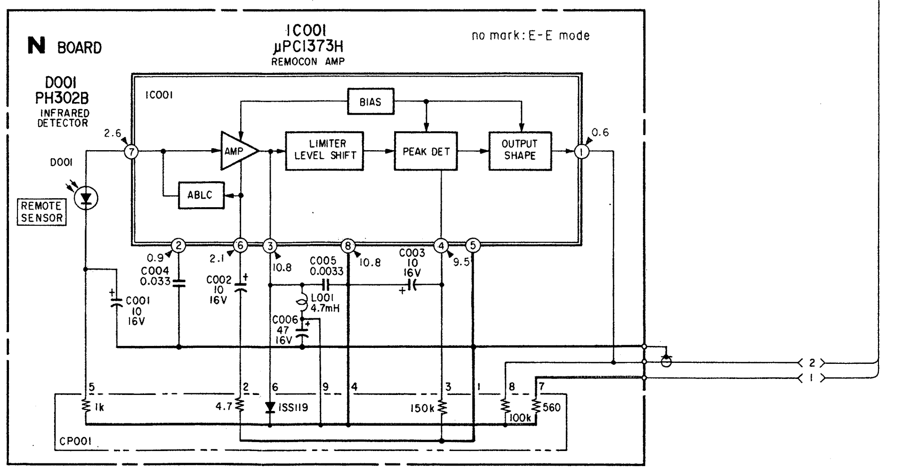

L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z
A1
TP 621 622 601 TP
D 639 638, 629, 635, 636, 637 628 630 633 634 632 631 624 623 621 622 625 626 627 601 D
Q 628 627 626 624 623 625 621 622 602 601 604 603 Q
[M BOARD]
Voltages are measured from emitter of Q602
CN304 (WHT)
UN -30V
UN AC 3.2V
UN AC 3.2V
UN 6.2V
POWER ON
GND
UN 12V
CN306 (RED)
TO TUNER, AUDIO BLOCK RF UNIT CN001
SW 9V
GND
UN 12V
CN403 (WHT)
TO VIDEO BLOCK YC-25 BOARD CN003
SW 12V
SW 9V
GND
CN405 (WHT)
TO TUNER, AUDIO BLOCK AM-3 BOARD CN505
SW 12V
GND
CN301 (WHT)
TO SERVO, SYSTEM CONTROL BLOCK SS-16 BOARD CN609
SW 5V
GND
SW 12V
GND
SW 12V
CN302 (BLK)
TO TUNER, AUDIO BLOCK TU-39 BOARD CN001
SW 5V
UN 42V
UN -42V
GND
BRN
BLU
AC110-240V 50/60Hz
TP621
TP622
TP601
F601
T601
T602
L601
RY621
1-611-048
[D BOARD]
1-611-049
[C BOARD]
IC651
1-611-221
11
11
11
ARD]
RED WHT BLU ORG BLK BRN VIO RED WHT BLU ORG BLK BRN VIO RED WHT BLU ORG BLK BRN RED WHT BLU ORG BLK BRN
TM38
RECORD
D103
D101
S102
S101
RESET
TIMER/COUNTER
13
FL 101 (FLUORESCENT DISPLAY TUBE)
7G 6G 5G 4G 3G 2G 1G
1 2 3 4 5 6 7 PROG
col 1
col 2
F NC 4~7 1,2 3 col1 col2 f g 7G e d c 6G b a g2 f2 5G a2 e2 4G d2 c2 3G b2 f1 2G g1 1G e1 d1 c1 b1 NC a1 PROG F
1 5 10 15 20 25 30 35 36

SR-17 (POWER SUPPLY REGULATOR) **TM-37** (TIMER CONTROL) **TM-38** (TIMER INDICATOR REC RESET TIMER COUNTER SWITCH) **TM-39** (TIMER PRESET SWITCH) **N** (REMOTE CONTROL SIGNAL SENSOR)

A B C D E F G H I J K L M N O P

– Ref. No. SR-17 (M, C, D) BOARD: 6000 series., TM-37 BOARD: 7000 series, TM-38 BOARD: 7100 series, TM-39 BOARD: 7200 series, N BOARD: 9600 series –


1
2
3
4
5
6
7
M BOARD
C BOARD
D BOARD
AC110 – 240V 50/60Hz
AC IN
F601 3.15A
L601
D601 LB156 RECT
R601 3.3(5W)
Q601,602 2SC3158 SW
Q603,604 2SD1020 SW
T601
T602
TP601
TP621
TP622
D621 ESAC33-020S RECT
D622 V0-9C
Q622 2SC2785 SELF EXCITED OSC STOPPER
D625 IS2076
Q621 2SD667A SW REG
D623 IS2076A
D624 RD11EB2
D626,627 RD4.3EB2
Q625 2SD1020 UN 6.2V REG
D632,633,634 IS2076
D631 RD6.2EB1
D628 IS2076
Q623 2SC2785 POWER CONT
D629,630 IS2076
Q624 2SA1175 POWER CONT
Q627 2SD882 9V REG
D638 IS2076
Q628 2SC2785 9V REG
D639 RD6.8EB2
Q626 2SD882 5V REG
D635,636 IS2076
D637 RD5.6EB3
RY621 G2U-112P-Cu
D652 RD13EB1
D651 10E-1
IC651 MB3759 PWM REG
REFERENCE REGULATOR
PWM COMPARATOR
FF
OSC
Q1 2SA1175 DC-DC CONVERTER
Q2 2SD789 DC-DC CONVERTER
D1 IS2076A
T1
D2,3 IS2076A
D4 RD3.9EL1
Q3,4 2SC2785 DC-DC CONVERTER
CN405(WHT) SW 12V GND — TO TUNER/AUDIO BLOCK AM-3 BOARD CN505
CN403(WHT) SW 12V SW 9V GND — TO VIDEO BLOCK YC-25 BOARD CN003
CN306(RED) SW 9V GND UN 12V — TO TUNER AUDIO BLOCK RF UNIT CN001
CN301(WHT) SW 5V GND SW 12V GND SW 12V — TO SERVO SYSCON BLOCK SS-16 BOARD CN609
CN304(WHT) UN –30V UN AC 3.2V UN AC 3.2V UN 6.2V POWER ON GND UN 12V
CN302(BLK) SW 5V UN 42V UN –42V GND — TO TUNER AUDIO BLOCK TU-39 BOARD CN001
9V
Voltages are measured from emitter of Q602
no mark: E-E mode 220V (AC)

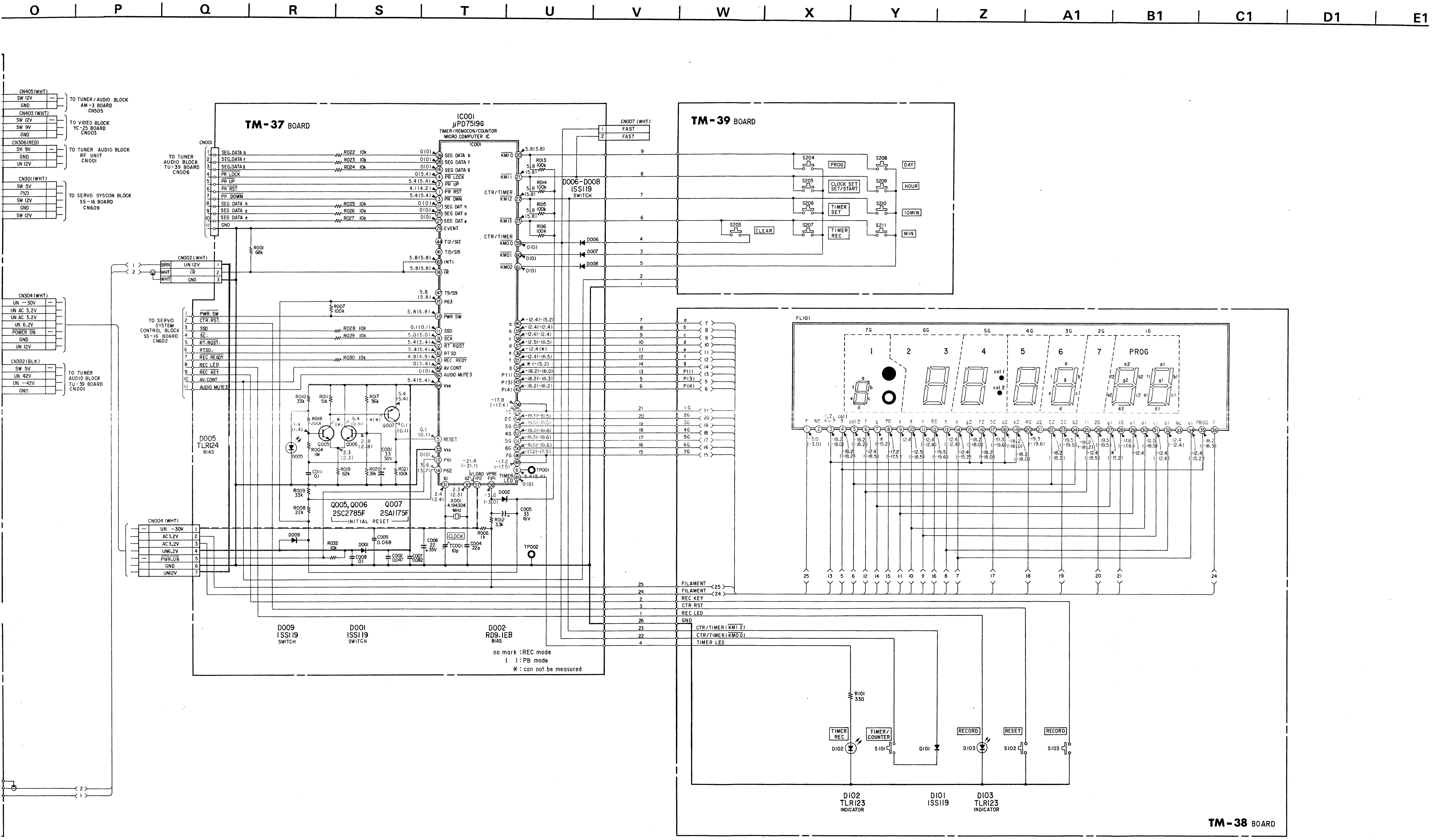

8
9
10
N BOARD
IC001 µPC1373H REMOCON AMP
D001 PH302B INFRARED DETECTOR
REMOTE SENSOR
AMP
BIAS
LIMITER LEVEL SHIFT
PEAK DET
OUTPUT SHAPE
ABLC
CP001
no mark: E-E mode

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in µF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : Nonflammable resistor
- ▭ : Fusible resistor
- ▬▬ : B + bus.
- ▬ ▬ : B – bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.

The voltage value is measured using a digital tester (10MΩ/V).

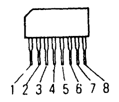
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

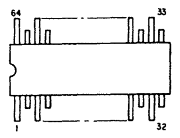

O
P
Q
R
S
T
U
V
W
X
Y
Z
A1
B1
C1
D1
E1
TM-37 BOARD
TM-39 BOARD
TM-38 BOARD
IC001
μPD7519G
TIMER/REMOCON/COUNTOR MICRO COMPUTER IC
CN405(WHT)
CN403(WHT)
CN306(RED)
CN301(WHT)
CN304(WHT)
CN302(BLK)
CN001
CN002(WHT)
CN004(WHT)
CN007(WHT)
TO TUNER/AUDIO BLOCK AM-3 BOARD CN505
TO VIDEO BLOCK YC-25 BOARD CN003
TO TUNER AUDIO BLOCK RF UNIT CN001
TO SERVO SYSCON BLOCK SS-16 BOARD CN609
TO TUNER AUDIO BLOCK TU-39 BOARD CN006
TO SERVO SYSTEM CONTROL BLOCK SS-16 BOARD CN602
TO TUNER AUDIO BLOCK TU-39 BOARD CN001
SEG DATA b
SEG DATA f
SEG DATA g
PR LOCK
PR UP
PR RST
PR DOWN
SEG DATA h
SEG DATA a
SEG DATA e
GND
PWR SW
CTR RST
SSD
SC
RT RQST
RTSD
REC READY
REC LED
REC KEY
AV CONT
AUDIO MUTE3
UN -30V
AC3.2V
UN6.2V
PWR ON
UN12V
FAST
KMI0
KMI1
KMI2
KMI3
KMO0
KMO1
KMO2
CTR/TIMER
D006-D008
1SS119
SWITCH
S203
CLEAR
S204
PROG
S205
CLOCK SET SET/START
S206
TIMER SET
S207
TIMER REC
S208
DAY
S209
HOUR
S210
10MIN
S211
MIN
FL101
PROG
FILAMENT
REC KEY
CTR RST
REC LED
GND
CTR/TIMER (KMI 2)
CTR/TIMER (KMO 0)
TIMER LED
R101 330
TIMER REC
TIMER/COUNTER
RECORD
RESET
RECORD
D102
S101
D101
D103
S102
S103
D102 TLR123 INDICATOR
D101 1SS119
D103 TLR123 INDICATOR
D005 TLR124 BIAS
Q005, Q006 2SC2785F
Q007 2SA1175F
INITIAL RESET
X001 4.194304 MHz
CLOCK
TP001
TP002
D009 1SS119 SWITCH
D001 1SS119 SWITCH
D002 RD9.1EB BIAS
no mark : REC mode
( ) : PB mode
* : can not be measured

SEMICONDUCTORS

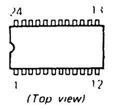
μPC1391H CX20008
μPC1373H CX20061
CX7926



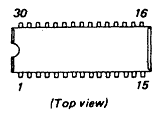
μPD7519G



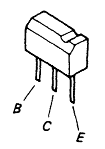
CX864
CX867
CX868
CX869A


24
1
12
(Top view)

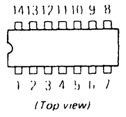
M54836AP


30
16
1
15
(Top view)

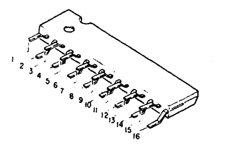
2SA874
2SA881
2SC2673



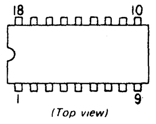
μPC324C MB84013B
μPD4013BC MB84069UB
HD14069UBP TC4013BP
MB3614 TC4069UBP


14 13 12 11 10 9 8
1 2 3 4 5 6 7
(Top view)

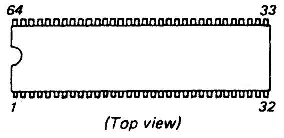
BA3402



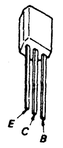
CX882


18
10
1
9
(Top view)

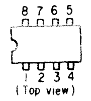
MB88421


64
33
1
32
(Top view)

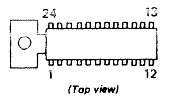
2SA1048
2SA1115
2SC403SP
2SC2458
2SC2603



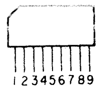
μPC358C
μPC4558C
NJM4558D
NJM4562D-D


8 7 6 5
1 2 3 4
(Top view)

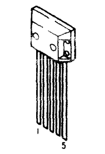
CX134A
CX135


24
13
1
12
(Top view)

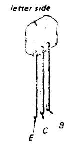
CX894
TA7320P



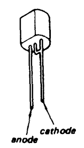
STR1229



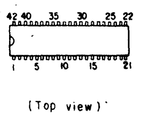
2SA1175
2SC2785
2SD1020


letter side
E
C
B

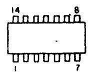
μPC574J


cathode
anode

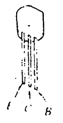
CX194B-0
CX194B-5


42 40 35 30 25 22
1 5 10 15 21
(Top view)

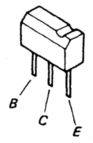
CX7945



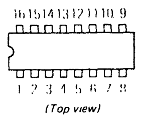
2SA772 2SC1475
2SB739 2SD788
2SB740 2SD789
2SC1474



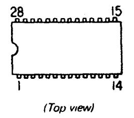
2SA1184



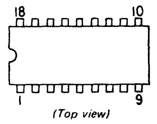
μPC1571C MB84053B
μPD4053BC MB3759
CX870A TA7607AP
HD14053BP TC4053BP


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

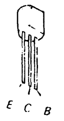
CX862
CX869
CX869A


28
15
1
14
(Top view)

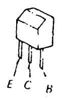
LA7040


18
10
1
9
(Top view)

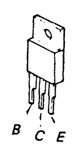
2SA733
2SA844
2SC945
2SD667A



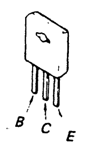
2SB733
2SB734
2SD773
2SD774



2SC1061
2SC1826
2SC1827

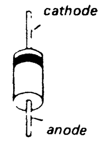


2SD1310

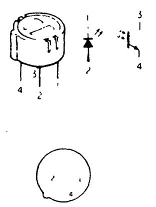


1N4148H
1S1555
1S1585
1S2076
1S2473
1SS133
RD3.9EL1
RD4.3EB2
RD5 6EB1
RD5.6EB3
RD6.2E-B
RD6.2EB1
RD6.8EB2
RD7.5EB1

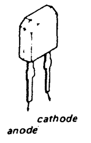
RD7.5EB2
RD8.2E-B1
RD8.2EB2
RD9.1E-B
RD10EB1
RD10EB2
RD11EB2
RD12EL1
RD12EL2
RD12EL3
RD13E-B
RD13EB1
RD13EB2
RD13EB3


cathode
anode

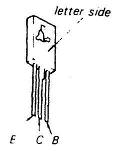
GP-2S02A
GP-2S02B
GP-2S02C



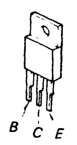
PH302B


cathode
anode

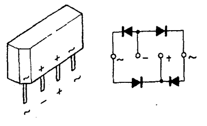
2SD882


letter side
E
C
B

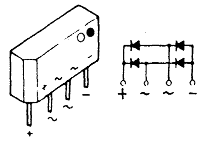
2SD313HP



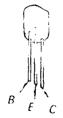
LD156



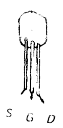
S5VB10
S1VB10



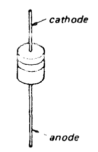
2SC2009



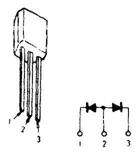
2SK107
2SK105A



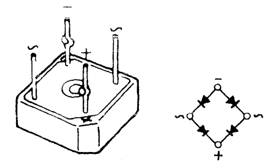
1SS119
1SS148


cathode
anode

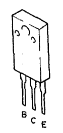
MC911



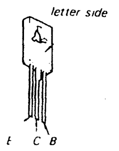
S5VB10
S5VB20



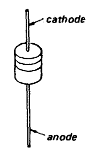
2SC3158



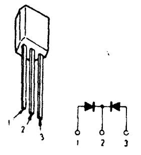
DTC144ES


letter side
E
C
B

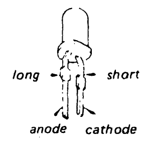
1SS120


cathode
anode

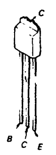
MC921



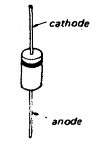
TLG123A TLR124
TLO123 TLY123
TLR123


long
short
anode
cathode

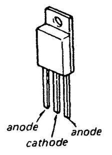
2SD1164



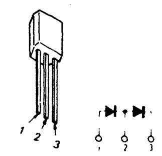
10E-2
EQA02-13AB5
GP08D


cathode
anode

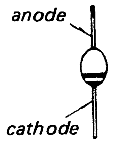
EAC33-05


anode
anode
cathode

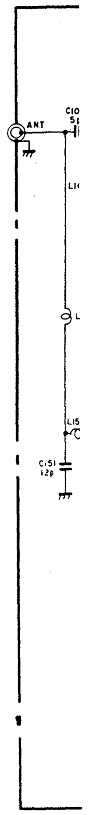
MC931



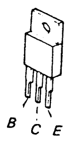
V09G


anode
cathode

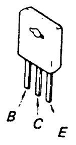
VHF/
• BT-



2SC1061
2SC1826
2SC1827

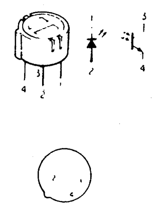


2SD1310

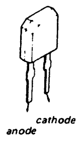


1N4148H	**RD7.5EB2**
1S1555	**RD8.2E-B1**
1S1585	**RD8.2EB2**
1S2076	**RD9.1E-B**
1S2473	**RD10EB1**
1SS133	**RD10EB2**
RD3.9EL1	**RD11EB2**
RD4.3EB2	**RD12EL1**
RD5 6EB1	**RD12EL2**
RD5.6EB3	**RD12EL3**
RD6.2E-B	**RD13E-B**
RD6.2EB1	**RD13EB1**
RD6.8EB2	**RD13EB2**
RD7.5EB1	**RD13EB3**

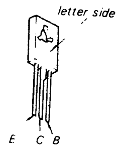
GP-2S02A
GP-2S02B
GP-2S02C



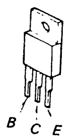
PH302B

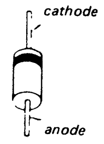

cathode
anode

2SD882

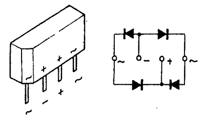

letter side
E
C
B

2SD313HP

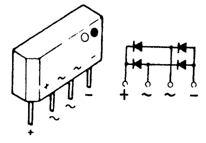



cathode
anode

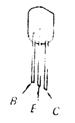
LD156



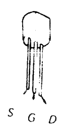
S5VB10
S1VB10



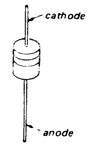
2SC2009



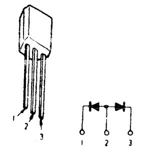
2SK107
2SK105A



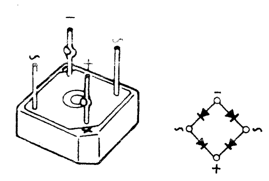
1SS119
1SS148


cathode
anode

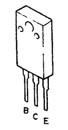
MC911



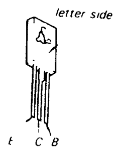
S5VB10
S5VB20



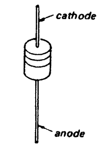
2SC3158



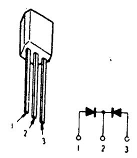
DTC144ES


letter side
E
C
B

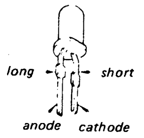
1SS120


cathode
anode

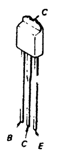
MC921



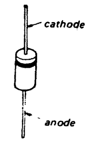
TLG123A **TLR124**
TLO123 **TLY123**
TLR123


long
short
anode
cathode

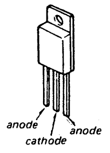
2SD1164



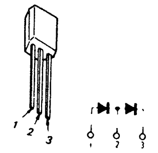
10E-2
EQA02-13AB5
GP08D


cathode
anode

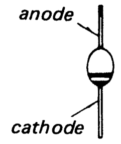
EAC33-05


anode
cathode
anode

MC931

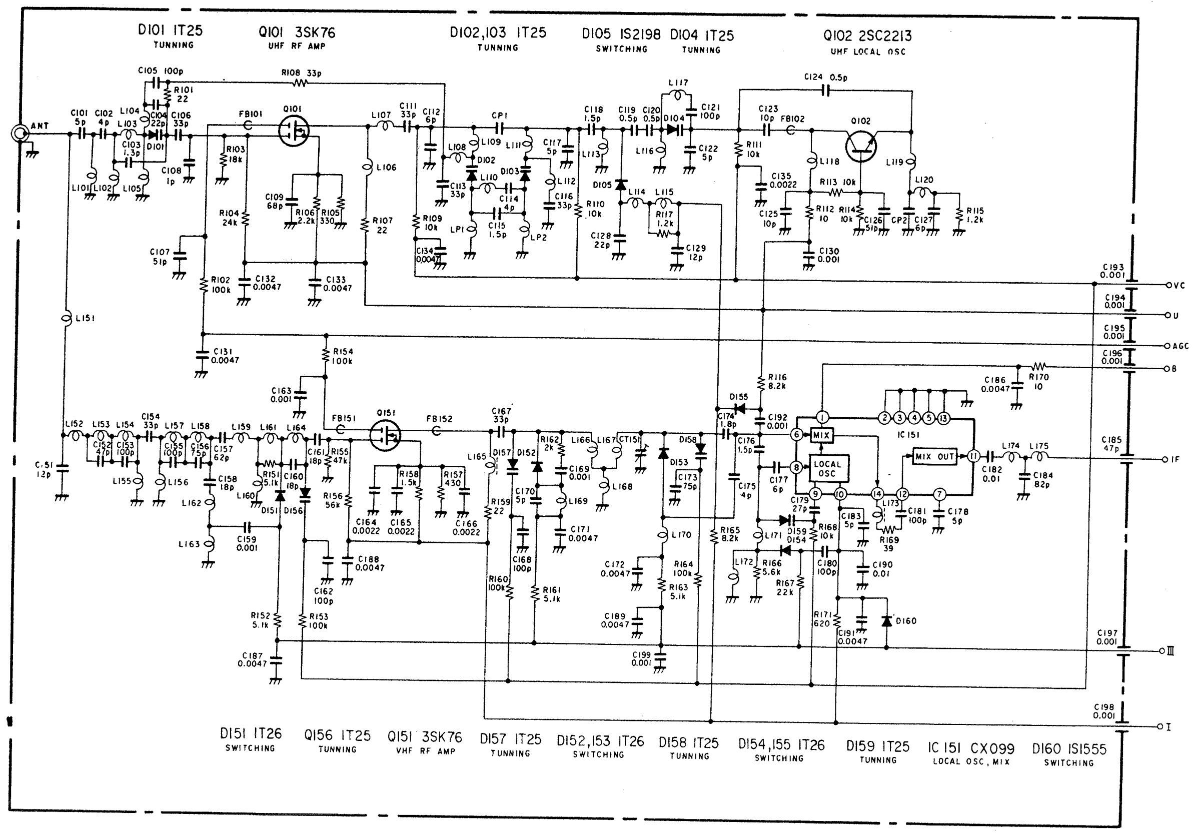


VO9G


anode
cathode

VHF/UHF TUNER SCHEMATIC DIAGRAM

- BT-881

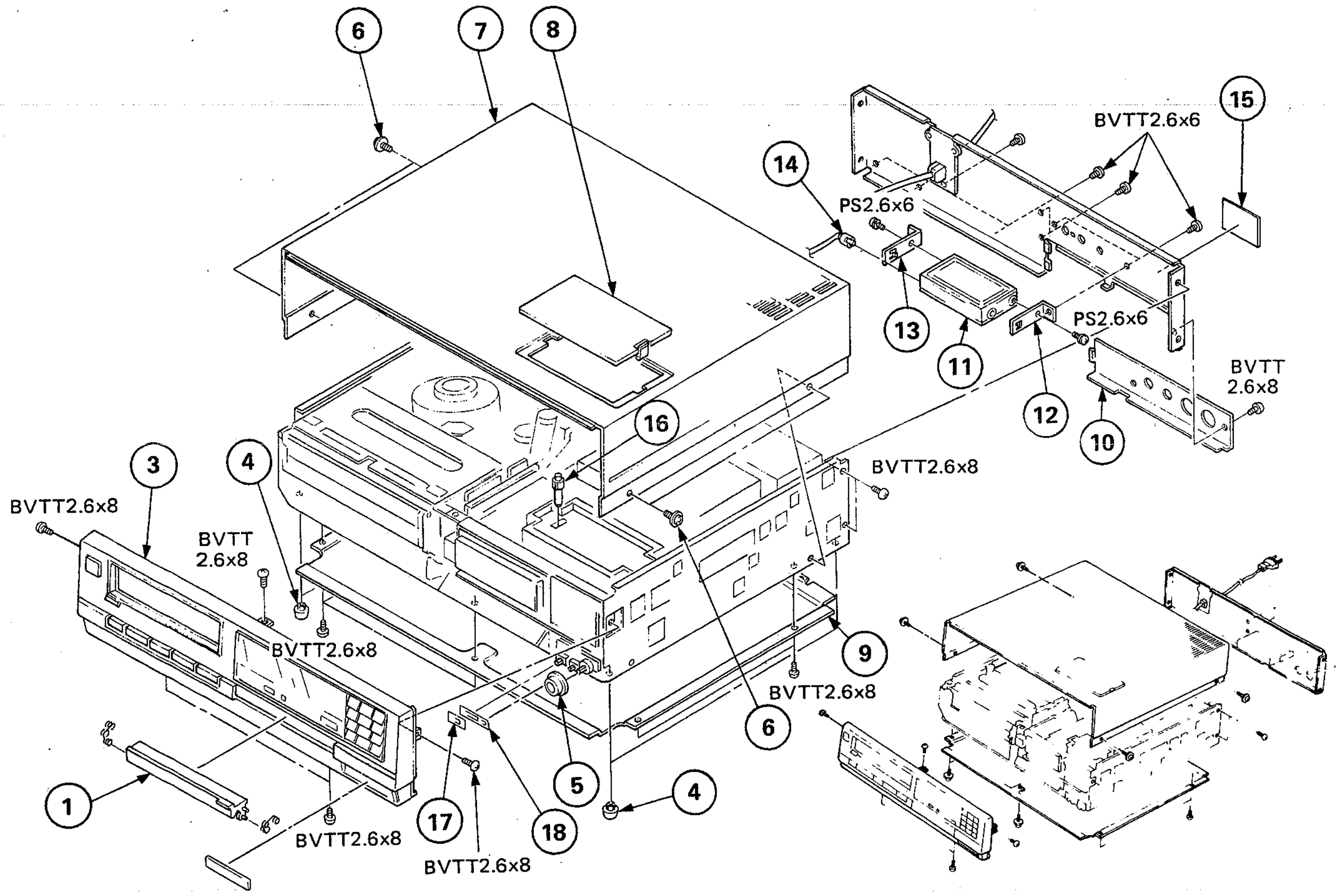

D101 1T25
TUNNING
Q101 3SK76
UHF RF AMP
D102,103 1T25
TUNNING
D105 1S2198
SWITCHING
D104 1T25
TUNNING
Q102 2SC2213
UHF LOCAL OSC
ANT
VC
U
AGC
B
IF
III
I
IC151
MIX
LOCAL OSC
MIX OUT
D151 1T26
SWITCHING
Q156 1T25
TUNNING
Q151 3SK76
VHF RF AMP
D157 1T25
TUNNING
D152,153 1T26
SWITCHING
D158 1T25
TUNNING
D154,155 1T26
SWITCHING
D159 1T25
TUNNING
IC151 CX099
LOCAL OSC, MIX
D160 1S1555
SWITCHING

SECTION 4
EXPLODED VIEW

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

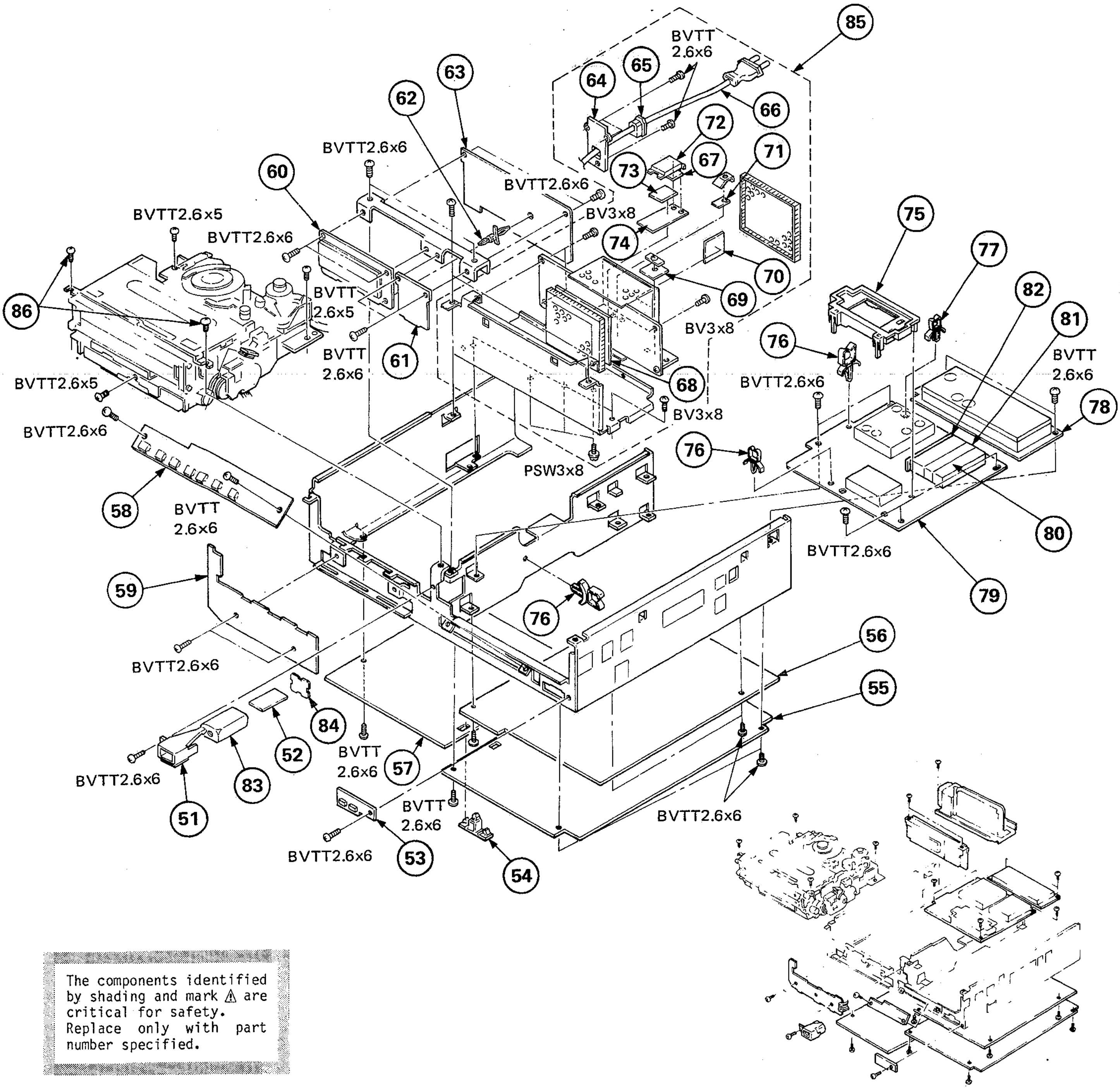
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

1. FRONT PANEL AND CABINET ASSEMBLIES



No.	Part No.	Description	Remark
1	X-3681-125-2	DOOR ASSY, TIMER (SILVER)	
	X-3681-147-0	DOOR ASSY, TIMER (RED)	
3	A-6703-366-A	PANEL BLOCK ASSY, FRONT (SILVER)	1
	A-6703-385-A	PANEL BLOCK ASSY, FRONT (RED)	1
4	3-670-155-00	LEG	
5	3-681-118-00	KNOB, TRACK CONTROL	
6	3-703-354-01	SCREW (OS), CASE, CLAW	
7	X-3681-118-0	CASE ASSY, UPPER (SILVER)	
	X-3681-140-0	CASE ASSY, UPPER (RED)	
8	X-3681-124-0	DOOR ASSY, PRESET (SILVER)	
	X-3681-139-0	DOOR ASSY, PRESET (RED)	
9	3-681-152-00	PLATE, BOTTOM	
10	♠:3-681-114-00	PANEL, CONNECTOR	
11	⚠ 1-464-270-00	BOOSTER, RF MODULATOR(RFU-808)	
12	♠:3-681-101-00	BRACKET (RIGHT), RBM	
13	♠:3-681-102-00	BRACKET (LEFT), RBM	
14	♠:1-556-934-00	CABLE, PIN	
15	3-681-213-00	LABEL, MODEL NUMBER	
16	3-681-186-00	KNOB, TUNING	
17	3-681-167-00	COVER (SMALL), SL	
18	3-681-166-00	COVER (LARGE), SL	

2. TUNER, TIMER AND POWER ASSEMBLIES



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BVTT 2.6x6
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BVTT2.6x6
BVTT2.6x6
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BV3x8
BVTT2.6x5
BVTT2.6x6
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BVTT 2.6x5
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BV3x8
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BVTT 2.6x6
BVTT 2.6x6
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BVTT2.6x6
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BVTT2.6x5
BV3x8
BVTT2.6x6
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PSW3x8
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BVTT 2.6x6
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BVTT2.6x6
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BVTT2.6x6
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84
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BVTT 2.6x6
57
BVTT2.6x6
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BVTT 2.6x6
BVTT2.6x6
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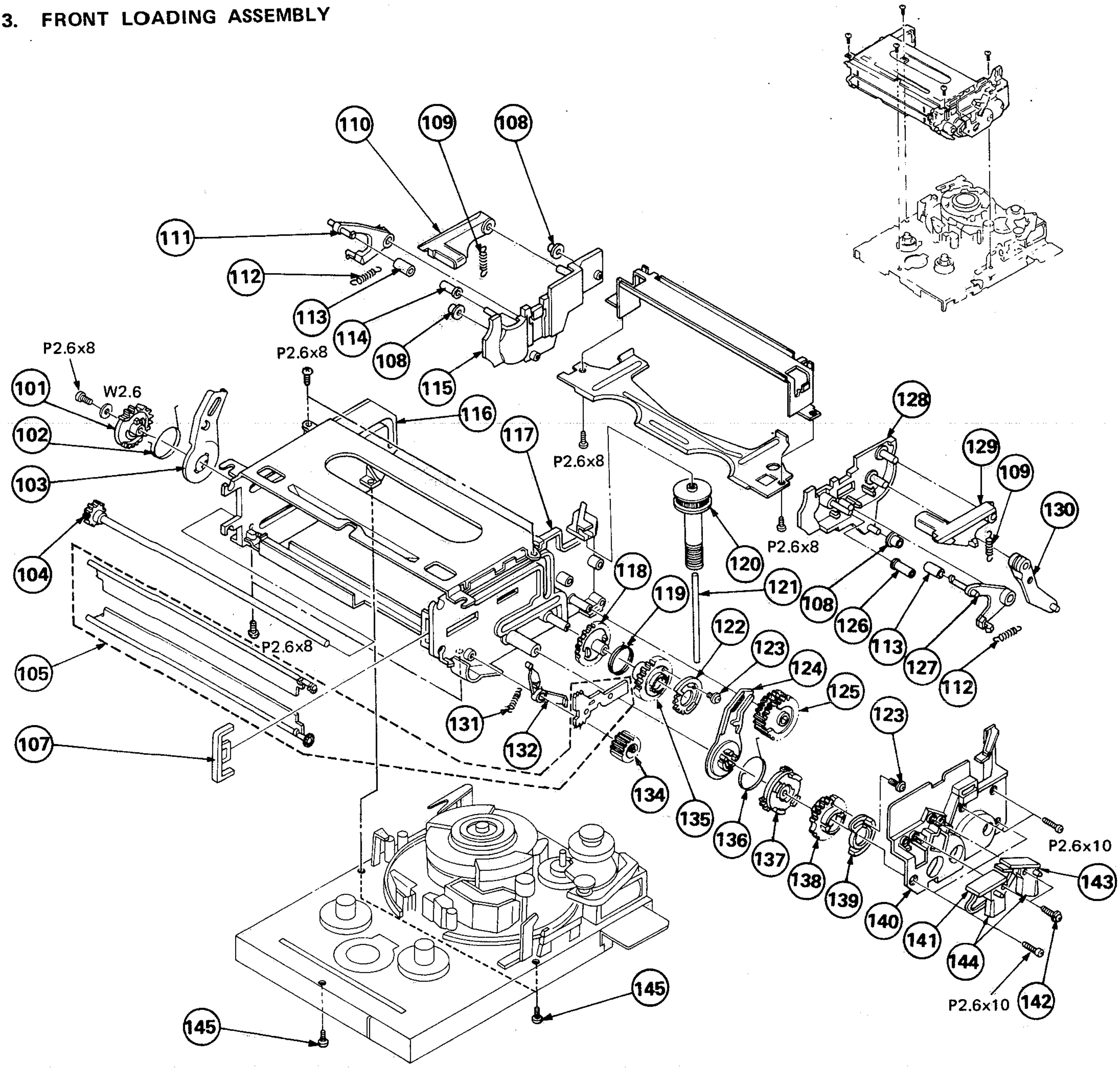
BVTT2.6x6
54

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
51	3-681-145-00	HOLDER, RAY CATCHER	
52	♦:1-606-794-00	N BOARD	
53	♦:1-610-410-00	SW-25 BOARD	
54	♦:3-681-184-00	HOLDER, PC BOARD	
55	♦:A-6711-450-A	YC-25 BOARD, COMPLETE	
56	♦:A-6715-187-A	SS-16 BOARD, COMPLETE	
57	♦:A-6711-443-A	RY-1 BOARD, COMPLETE	
58	♦:1-610-405-00	TM-39 BOARD	
59	♦:1-610-406-00	FU-14 BOARD	
60	♦:1-610-404-00	TM-38 BOARD	
61	♦:1-610-407-00	CH-36 BOARD	
62	3-681-127-00	HOLDER, PCB	
63	♦:1-610-403-00	TM-37 BOARD	
64	3-681-171-00	BRACKET, POWER CORD	
65	⚠.3-703-244-00	BUSHING, CORD	
66	⚠.1-534-817-12	CORD, POWER	
67	♦:2-430-358-00	PLATE, SHIELD	
68	♦:2-430-339-00	SHEET, SHIELD	
69	♦:2-430-341-00	RUBBER, RADIATION	
70	♦:2-430-340-00	SHEET, SHIELD	
71	♦:2-430-269-00	RUBBER, RADIATION	
72	♦:2-430-267-00	PLATE, SHIELD	
73	♦:2-430-209-00	RUBBER, RADIATION	
74	♦:2-430-342-00	RUBBER, RADIATION	
75	3-681-146-00	COVER, PRESET	
76	♦:3-655-214-00	CLIP, CABLE	
77	♦:3-644-407-00	CLIP, AC WIRE E	
78	♦:A-6713-175-A	AM-3 BOARD, COMPLETE	
79	♦:A-6721-168-A	TU-39 BOARD, COMPLETE	
80	⚠.1-463-350-00	TUNER (BT-881)	
81	♦:3-662-383-00	BAND, RETAINER, TUNER	
82	♦:1-610-400-00	MT-4 BOARD	
83	♦:4-342-117-00	CASE, SHIELD (MAIN), R	
84	♦:4-342-118-00	LID, SHIELD CASE, R	
85	⚠:1-413-156-00	SWITCHING REGULATOR (SR-17)	64-74
86	3-679-373-00	SCREW (+BV2.6x6)	

3. FRONT LOADING ASSEMBLY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P2.6x8
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P2.6x8
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P2.6x8
P2.6x8
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P2.6x8
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P2.6x10
P2.6x10
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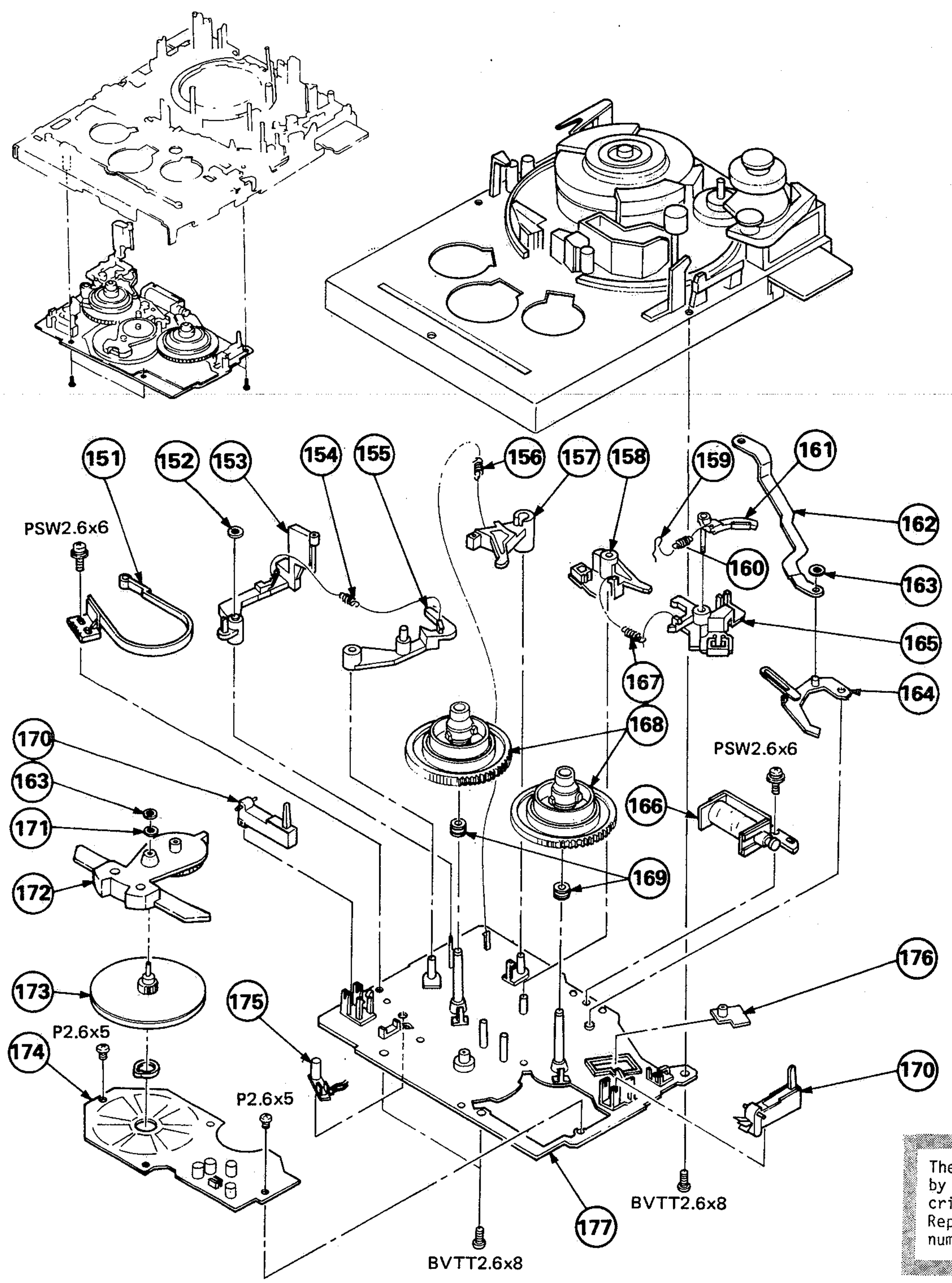
No.	Part No.	Description	Remark
101	3-679-226-00	GEAR (LEFT), ARM, DRIVING	
102	3-679-145-00	SPRING (LEFT)	
103	3-679-220-00	ARM (LEFT), DRIVING	
104	X-3679-105-0	SHAFT ASSY, GEAR, MIDWAY	
105	A-6751-183-A	KIT, FL DOOR	
107	3-679-137-00	HOLDER, OUTER DOOR	
108	3-679-143-00	ROLLER	
109	3-679-188-00	SPRING, TENSION	
110	3-679-132-00	LEVER (LEFT), PREVENTION	
111	3-679-130-00	LEVER (LEFT), RETAINER, CASSETTE	
112	3-679-288-00	SPRING, TENSION	
113	3-679-135-00	RUBBER, RETAINER, CASSETTE	
114	3-679-128-00	ROLLER (RIGHT), DRIVING	
115	🌢:X-3679-107-0	PLATE ASSY, SIDE, BASE LEFT	
116	🌢:3-679-266-00	PLATE, SIDE, LEFT	
117	🌢:3-679-265-00	PLATE, SIDE, RIGHT	
118	3-679-217-04	GEAR (A), LIMITER	
119	3-679-139-00	SPRING	
120	3-679-215-00	GEAR, WORM	
121	3-679-123-00	SHAFT, GEAR, WORM	
122	3-679-124-00	CAM (CASSETTE OFF)	
123	3-669-480-21	+ PTPWH 2	
124	3-679-219-00	ARM (RIGHT), DRIVING	
125	3-679-216-00	WHEEL, WORM	
126	3-679-316-00	ROLLER (LEFT), DRIVING	
127	3-679-129-00	LEVER(RIGHT), RETAINER, CASSETTE	
128	🌢:X-3679-106-0	PLATE ASSY, SIDE, BASE RIGHT	
129	3-679-131-00	LEVER (RIGHT), PREVENTION	
130	3-679-133-00	ARM, LID OPEN	
131	3-679-189-00	SPRING, TENSION	
132	3-679-134-00	ARM, SWITCHING, DOOR	
134	3-679-126-00	GEAR (RIGHT), MIDWAY	
135	3-679-218-00	GEAR (B), LIMITER	
136	3-679-144-00	SPRING (RIGHT)	
137	3-679-225-00	GEAR (RIGHT), ARM, DRIVING	
138	3-679-125-00	GEAR, DRIVING	
139	3-679-138-00	CAM (CASSETTE ON)	
140	🌢:3-679-214-00	HOLDER, GEAR, WORM	
141	🌢:1-609-227-00	CS-3 BOARD	
142	3-669-480-00	+ PTPWH 2	
143	🌢:1-609-228-00	CS-4 BOARD	
144	1-554-241-00	SWITCH, LEVER	
145	3-679-373-00	SCREW (+ BV2.6X6)	

4. REEL TABLE ASSEMBLY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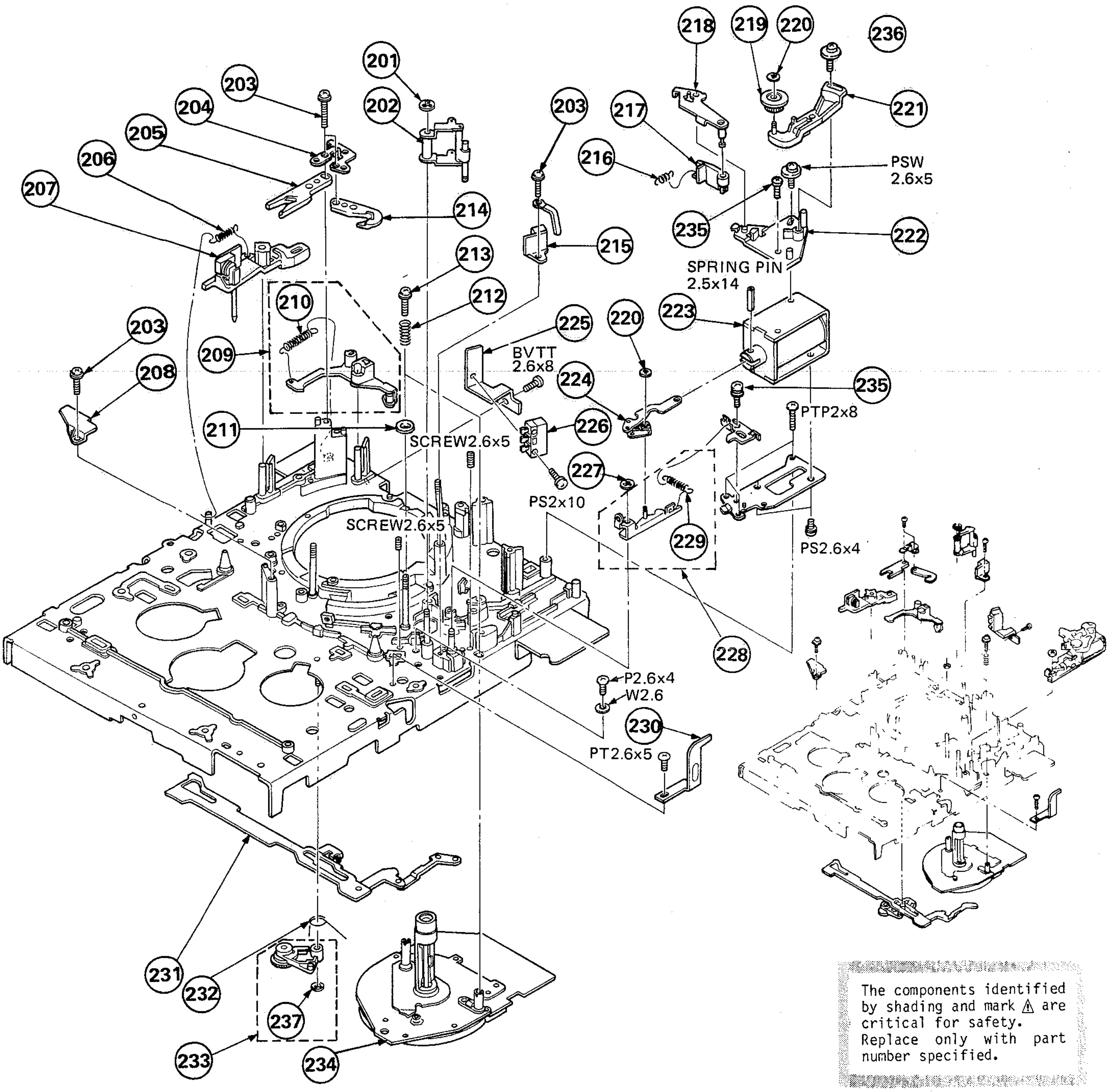
PSW2.6x6
PSW2.6x6
P2.6x5
P2.6x5
BVTT2.6x8
BVTT2.6x8

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
151	X-3679-120-0	BAND ASSY, TENSION REGULATOR	
152	3-669-465-00	WASHER (1.5), STOPPER	
153	X-3679-122-0	LEVER ASSY, TENSION REGULATOR	
154	3-679-156-00	SPRING, TENSION	
155	♠:3-679-230-00	LEVER, FUNCTION	
156	3-679-151-00	SPRING, TENSION	
157	♠:3-679-231-00	LEVER, BRAKE, SOFT	
158	X-3679-117-0	BRAKE ASSY, S	
159	♠:3-681-163-00	HOOK, SPRING, REWIND	
160	3-681-156-00	SPRING, TENSION	
161	♠:X-3681-105-0	ARM ASSY, REWIND BRAKE	
162	♠:3-679-168-00	JOINT, BRAKE, L	
163	3-669-595-00	WASHER (2), STOPPER	
164	X-3679-119-0	ARM ASSY, STOPPER, PENDULUM	
165	X-3679-118-0	BRAKE ASSY, T	
166	⚠ 1-454-348-31	SOLENOID, BRAKE PLUNGER	PM901
167	3-679-190-02	SPRING, TENSION	
168	X-3681-104-0	TABLE ASSY, S REEL	
169	3-646-185-00	BEARING	
170	1-554-374-00	SWITCH, LEVER	S901,902
171	3-679-318-00	WASHER, PENDULUM ARM	
172	A-6759-074-H	ARM BLOCK ASSY, PENDULUM	
173	X-2622-201-0	ROTOR ASSY, R	
174	♠:A-4910-021-A	R STATOR BOARD, COMPLETE	M903
175	♠:1-610-401-00	RD-6 BOARD	
176	♠:1-610-402-00	RD-7 BOARD	
177	♠:X-3679-130-0	CHASSIS ASSY, SUB	

5. CHASSIS ASSEMBLY (1)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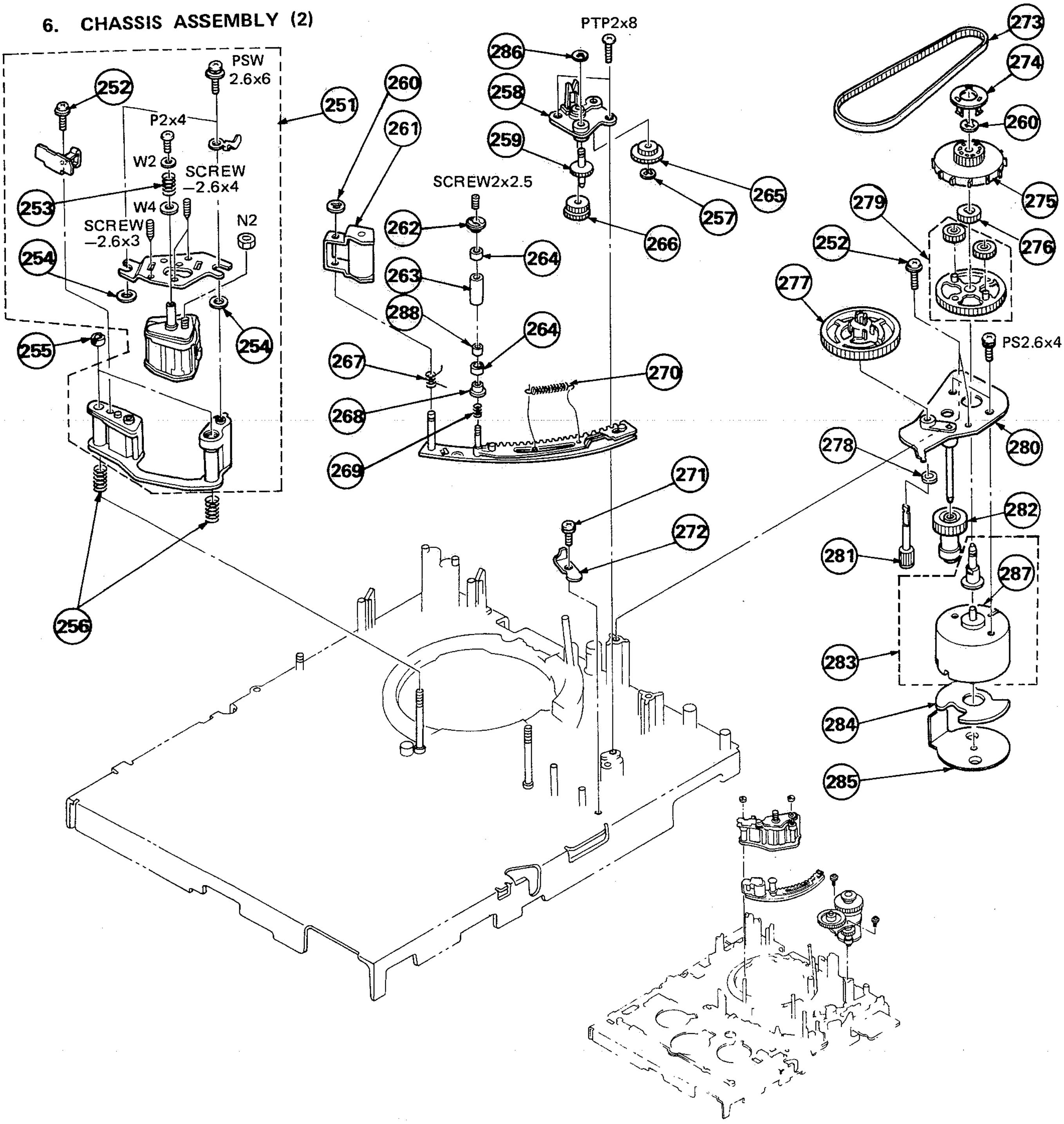
PSW
2.6x5
SPRING PIN
2.5x14
BVTT
2.6x8
PTP2x8
SCREW2.6x5
SCREW2.6x5
PS2x10
PS2.6x4
P2.6x4
W2.6
PT2.6x5

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
201	3-669-596-00	WASHER (2.3), STOPPER	
202	♠:X-3679-108-0	ARM ASSY, PRESS, PINCH	211
203	3-669-480-11	+ PTPWH 2	
204	♠:3-672-540-00	PLATE, GROUND, TAPE GUIDE	
205	♠:3-669-618-00	PLATE (2), ADJUST	
206	3-679-164-00	SPRING, TENSION	
207	1-464-249-21	SENSOR, S COIL	L901
208	♠:3-669-476-04	PLATE, GUIDE	
209	X-3679-149-0	ARM (B) ASSY, LOCK	210
210	3-679-323-00	SPRING, TENSION	
211	♠:3-669-679-00	SPACER CAPSTAN	
212	3-679-359-00	SPRING, COMPRESSION	
213	3-669-633-00	SCREW, + PW2	
214	♠:3-672-507-00	PLATE (3-1), ADJUSTMENT	
215	1-464-250-00	SENSOR, T COIL	L902
216	3-508-108-XX	SPRING, TENSION	
217	♠:3-679-251-00	LIMITER, STOPPER	
218	♠:X-3679-123-0	ARM ASSY, STOPPER	
219	3-679-307-00	GEAR, TENSION	
220	3-669-465-00	WASHER (1.5), STOPPER	
221	♠:X-3679-145-0	ARM ASSY, CAR, TENSION	
222	♠:3-679-117-00	CHASSIS, ARM, STOPPER	
223	⚠ 1-454-349-21	SOLENOID, PLUNGER	PM902
224	X-3679-152-0	ARM (B) ASSY, PINCH SOLENOID	
225	♠:3-672-542-00	BRACKET, SWITCH, LE	
226	1-553-539-00	SWITCH, MICRO	S903
227	3-669-595-00	WASHER (2), STOPPER	
228	♠:X-3669-379-0	ARM (P) ASSY, PINCH LIMITER	229
229	3-465-159-XX	SPRING, TENSION	
230	♠:3-679-163-00	PLATE, LID OPEN	
231	X-3681-106-0	LEVER ASSY, SLIDE	
232	3-681-154-00	SPRING, TORSION	
233	X-3681-107-0	ARM ASSY, REVIEW BRAKE	237
234	8-838-048-01	MOTOR, DC (BHF-1908A)	M902
235	3-669-607-31	+PSW (SMALL ROUND) (2.6)	
236	3-681-231-00	SCREW (+ PW2.6X8), TAPPING	
237	3-701-436-11	WASHER, 1.6	

6. CHASSIS ASSEMBLY (2)


PTP2x8
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286
274
PSW
2.6x6
252
260
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258
260
261
P2x4
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W2
SCREW
−2.6x4
SCREW2x2.5
265
275
253
W4
279
SCREW
−2.6x3
N2
262
257
266
276
252
254
264
263
277
288
264
PS2.6x4
255
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267
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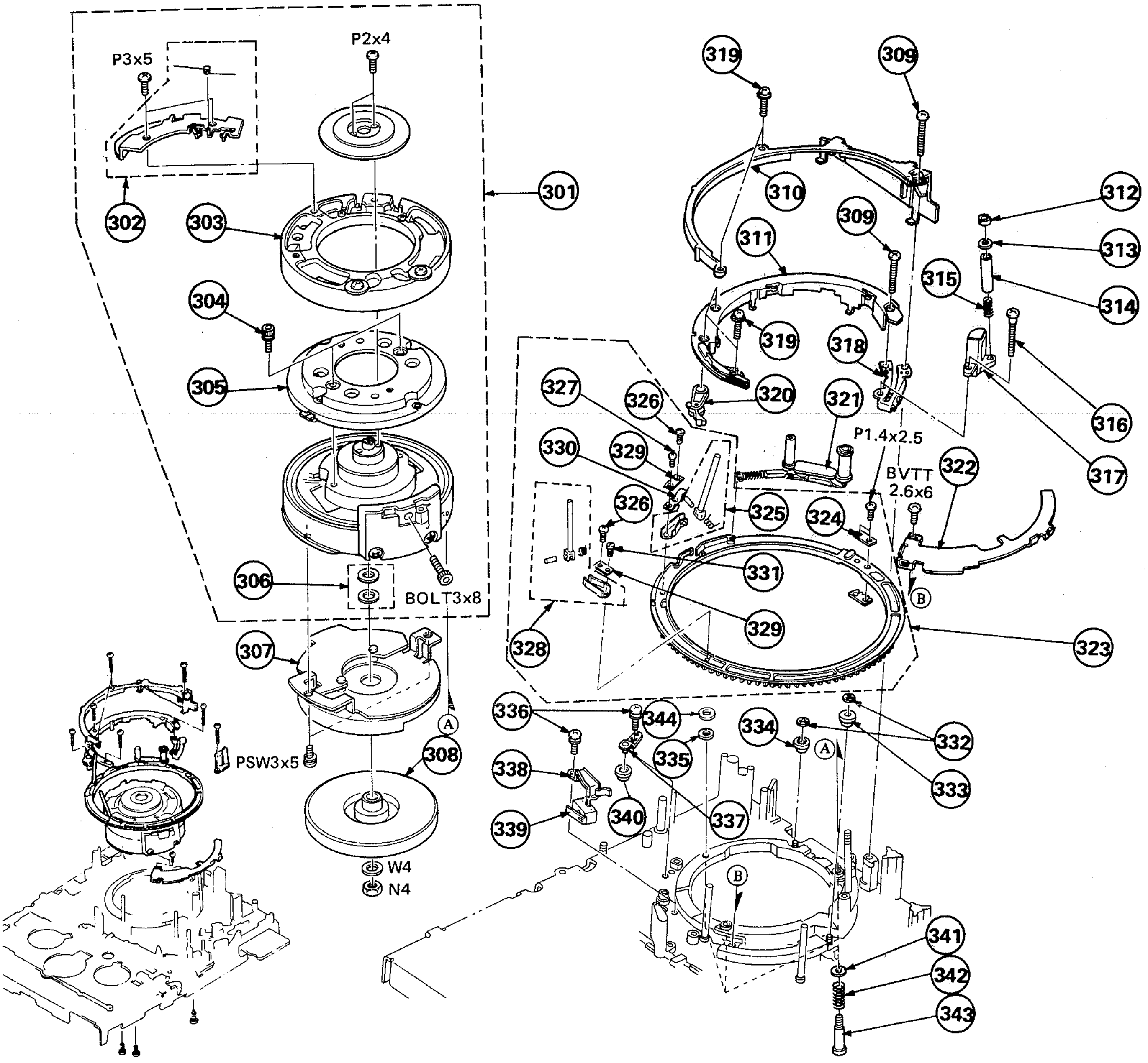
No.	Part No.	Description	Remark
251	A-6761-060-A	ACE ASSY	252,253,254
252	3-669-480-11	+ PTPWH 2	
253	♦:3-669-316-00	SPRING, COMPRESSION	
254	3-669-598-00	WASHER, CTL	
255	3-669-318-00	NUT, ADJUSTMENT, GUIDE	
256	3-669-317-00	SPRING, COMPRESSION	
257	3-669-465-00	WASHER (1.5), STOPPER	
258	X-3679-147-0	CHASSIS (B) ASSY, DRIVE GEAR	
259	X-3679-148-0	GEAR (F) ASSY (B)	
260	3-669-596-00	WASHER (2.3), STOPPER	
261	X-3669-307-6	ARM ASSY, PINCH ROLLER	
262	3-669-431-00	FLANGE (UPPER), GUIDE	
263	3-669-438-00	ROLLER, GUIDE	
264	3-669-443-00	BEARING, BALL (NO FLANGE)	
265	3-669-337-00	GEAR (D)	
266	3-669-338-00	GEAR (E)	
267	3-669-444-00	SPRING, TORSION	
268	3-669-432-00	FLANGE (LOWER), GUIDE	
269	3-669-452-00	SPRING, COMPRESSION	
270	3-549-014-00	SPRING, TENSION	
271	3-669-607-31	+PSW (SMALL ROUND) (2.6)	
272	♦:3-679-165-00	STOPPER, SLIDER	
273	3-679-119-00	BELT, SYNCHRO	
274	3-679-140-00	FLANGE, GEAR, INTERNAL	
275	3-679-101-00	GEAR, INTERNAL	
276	3-679-104-00	GEAR	
277	3-679-115-00	GEAR (LARGE), LOADING	
278	3-701-439-11	WASHER	
279	X-3679-111-0	CARRIER ASSY	
280	♦:X-3679-112-0	CHASSIS ASSY, GEAR, PLANET	
281	3-679-114-00	GEAR (SMALL), LOADING	
282	X-3669-321-0	GEAR (C) ASSY	
283	A-6737-118-A	MOTOR ASSY, L	287
284	♦:1-605-071-00	LM-8 BOARD	
285	♦:3-669-613-00	INSULATOR, L MOTOR	
286	3-669-595-00	WASHER (2), STOPPER	
287	1-541-163-00	MOTOR	
288	3-657-841-31	SPACER (2X2.5)	

7. DRUM AND S LOADING ASSEMBLIES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BOLT3x8
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PSW3x5
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BVTT
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No.	Part No.	Description	Remark
301	A-6050-201-A	DRUM ASSY (DSH-40A-R)302,303,304,305,306	
302	A-6760-066-B	SPRING ASSY, TAPE RETAINER	
303	A-6760-138-A	DRUM ASSSY, UPPER	
304	3-669-157-00	BOLT (WASHER) (2.6X8)	
305	A-6762-136-A	DISK ASSY	
306	X-3669-105-0	SPACE BLOCK ASSY	
307	X-2621-204-0	STATOR ASSY, D	
308	X-2621-202-0	ROTOR ASSY, D	
309	3-669-466-00	SCREW (M 2.6)	
310	♠:3-669-585-00	GUIDE (2), SHUTTLE	
311	♠:3-679-290-00	GUIDE (1-YA), SHUTTLE	
312	3-669-446-00	NUT, GUIDE, NO. 6	
313	3-679-910-00	FLANGE (S), GUIDE, No.6	
314	3-669-445-00	SPACER, GUIDE, NO. 6	
315	3-669-615-00	SPRING, COMPRESSION	
316	3-669-606-00	SCREW (2.6)	
317	8-825-508-10	HEAD, FE	
318	♠:X-3669-313-0	BASE ASSY, SLANT	
319	3-669-480-11	+ PTPWH 2	
320	X-3669-327-0	ARM ASSY, SWITCH, ULE	
321	A-6750-108-B	SHUTTLE BLOCK ASSY, THREADING	
322	♠:3-669-477-00	LINER, LINK, PIN	
323	X-3679-150-0	RING (YA) ASSY, S LOADING 324,325,326 327,328,329,330,331	
324	♠:3-669-616-00	RETAINER	
325	♠:X-3669-430-0	HOLDER BLOCK ASSY, #3 GUIDE	
326	3-669-478-00	SCREW (1X3), TAPPING	
327	3-669-479-11	SCREW (1.4X3.5), TAPPING	
328	♠:X-3669-429-0	HOLDER BLOCK ASSY, #2 GUIDE	
329	♠:3-669-472-02	RETAINER, SPRING, LEAF	
330	3-672-583-00	SPRING	
331	3-672-586-00	SCREW (1.4X3), TAPPING	
332	3-669-465-00	WASHER (1.5), STOPPER	
333	3-669-597-00	ROLLER (B), RING	
334	3-669-630-00	ROLLER (C), RING	
335	♠:3-669-646-11	SPACER, DRUM	
336	3-669-607-31	+PSW (SMALL ROUND) (2.6)	
337	♠:X-3669-329-0	PLATE ASSY, ADJUSTMENT	
338	♠:3-669-355-00	HOLDER, SWITCH, ULE	
339	1-553-718-00	SWITCH, MICRO	
340	3-669-360-00	ROLLER, RING	
341	3-669-600-11	WASHER, FLAT (3.5)	
342	3-429-123-00	SPRING	
343	3-669-302-00	SCREW, FITTING	
344	♠:3-669-646-00	SPACER, DRUM	

8. HARDWARE LIST

SCREW

7-621-255-25	SCREW +P 2X4
7-621-259-32	SCREW +P 2.6X5
7-621-259-35	SCREW +P 2.6X5
7-628-253-45	SCREW +PS 2X10
7-628-253-95	SCREW +PS 2.6X4
7-628-254-15	SCREW +PS 2.6X6
7-685-134-14	SCREW +P 2.6X8 TYPE2 NON-SLIT
7-685-135-14	SCREW +P 2.6X10 TYPE2 NON-SLIT
7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
7-685-791-04	SCREW +PTT 2.6X5 (S)
7-685-861-09	SCREW +BVTT 2.6X5 (S)
7-685-862-01	SCREW +BVTT 2.6X6 (S)
7-685-863-01	SCREW +BVTT 2.6X8 (S)
7-685-880-01	SCREW +BVTT 4X6 (S)
7-627-551-08	SCREW, PRECISION +P 1.4X1.6
7-627-551-28	SCREW, PRECISION +P 1.4X2.5
7-621-759-35	+PSW, 2.6X5
7-621-759-45	+PSW, 2.6X6
7-621-731-08	SET-SCT, HEX, 2x2.5, FLAT POINT

SET-SCREW

7-621-712-26	SET-SCREW, SLOT 2.6X3FLAT POINT
7-621-712-35	SET-SCREW, SLOT 2.6X4CONE POINT
7-621-712-46	SET-SCREW, SLOT 2.6X5FLAT POINT

TAPPING SCREW

7-685-105-11	TPG +P 2X8, TYPE 2, NON-SLIT

SPRING PIN

7-626-302-31	SPRING PIN, 2.5X14

NUT

7-622-205-05	N 2, TYPE 2

WASHER

7-688-001-11	W 2, MIDDLE
7-688-002-11	W 2.6, MIDDLE
7-688-004-02	W 4, SMALL

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS
- MF : μF, PF : μμF

RESISTORS
- All resistors are in ohms
- F : nonflammable

COILS
- MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
	♠:A-4910-021-A	R STATOR BOARD, COMPLETE (REEL MOTOR BOARD)				
		************************				
	♠:1-560-460-00	PIN, CONNECTOR 4P				
		CAPACITOR				
C1	1-123-821-00	ELECT	47MF	20%	16V	
C2	1-123-821-00	ELECT	47MF	20%	16V	
C3	1-123-821-00	ELECT	47MF	20%	16V	
C4	1-123-821-00	ELECT	47MF	20%	16V	
		DIODE				
D1	8-719-941-48	DIODE 1N4148TP				
		IC				
IC1	8-759-108-77	IC CX-877				
		TRANSISTOR				
Q1	8-729-100-01	TRANSISTOR 2SD992				
Q2	8-729-100-01	TRANSISTOR 2SD992				
Q3	8-729-100-01	TRANSISTOR 2SD992				
Q4	8-729-100-01	TRANSISTOR 2SD992				
Q5	8-729-100-01	TRANSISTOR 2SD992				
Q6	8-729-100-01	TRANSISTOR 2SD992				
		RESISTOR				
R1	1-247-823-00	CARBON	470	5%	1/6W	
R2	1-247-823-00	CARBON	470	5%	1/6W	
R3	1-247-823-00	CARBON	470	5%	1/6W	
R4	1-247-829-00	CARBON	820	5%	1/6W	
R5	1-247-871-00	CARBON	47K	5%	1/6W	
R6	1-247-871-00	CARBON	47K	5%	1/6W	
R7	1-247-871-00	CARBON	47K	5%	1/6W	
R8	1-247-871-00	CARBON	47K	5%	1/6W	
		DIODE				
S1	8-719-810-31	DIODE THS103-1				
S2	8-719-810-31	DIODE THS103-1				
**						
	♠:A-6711-443-A	RY-1 BOARD, COMPLETE				
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	♠:3-681-177-00	CASE (MAIN), SHIELD, RY				
	♠:3-681-178-00	LID, UPPER, SHIELD CASE, RY				
	♠:3-681-179-00	LID, BOTTOM, SHIELD CASE, RY				
		CAPACITOR				
C001	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C002	1-123-330-00	ELECT	22MF	20%	16V	
C003	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C004	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C005	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C006	1-123-305-00	ELECT	33MF	20%	10V	
C007	1-123-380-00	ELECT	1MF	20%	50V	
C008	1-123-380-00	ELECT	1MF	20%	50V	
C009	1-101-004-00	CERAMIC	0.01MF		50V	
C010	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C011	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C012	1-123-330-00	ELECT	22MF	20%	16V	
C013	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C014	1-161-019-00	CERAMIC	0.033MF	10%	25V	
C015	1-102-973-00	CERAMIC	100PF	5%	50V	
C016	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C017	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C018	1-123-381-00	ELECT	2.2MF	20%	50V	
C019	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C020	1-161-017-00	CERAMIC	0.022MF	10%	25V	
C021	1-123-356-00	ELECT	10MF	20%	16V	
C022	1-102-951-00	CERAMIC	15PF	5%	50V	
C023	1-102-951-00	CERAMIC	15PF	5%	50V	
C024	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C026	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C027	1-123-356-00	ELECT	10MF	20%	16V	
C028	1-161-017-00	CERAMIC	0.022MF	10%	25V	
C029	1-161-017-00	CERAMIC	0.022MF	10%	25V	
C030	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C031	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C032	1-161-013-00	CERAMIC	0.01MF	10%	25V	
C035	1-101-005-00	CERAMIC	0.022MF		50V	
C036	1-123-318-00	ELECT	33MF	20%	16V	
C037	1-102-851-00	CERAMIC	15PF	5%	50V	
C038	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C039	1-102-981-00	CERAMIC	300PF	5%	50V	
C040	1-102-981-00	CERAMIC	300PF	5%	50V	
C041	1-102-976-00	CERAMIC	180PF	5%	50V	
C044	1-102-515-00	CERAMIC	24PF	5%	50V	
C045	1-161-025-00	CERAMIC	0.1MF	10%	25V	
C046	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C047	1-161-021-00	CERAMIC	0.047MF	10%	25V	
C048	1-101-005-00	CERAMIC	0.022MF		50V	
C049	1-123-318-00	ELECT	33MF	20%	16V	
C051	1-123-318-00	ELECT	33MF	20%	16V	
C052	1-101-005-00	CERAMIC	0.022MF		50V	
C053	1-101-005-00	CERAMIC	0.022MF		50V	
C054	1-102-112-00	CERAMIC	330PF	10%	50V	
C055	1-101-006-00	CERAMIC	0.047MF		50V	
C056	1-102-112-00	CERAMIC	330PF	10%	50V	
C057	1-102-948-00	CERAMIC	11PF	5%	50V	
C058	1-102-112-00	CERAMIC	330PF	10%	50V	
C059	1-123-328-00	ELECT	4.7MF	20%	25V	
C060	1-102-119-00	CERAMIC	0.0015MF	10%	50V	
C061	1-101-004-00	CERAMIC	0.01MF		50V	
C062	1-123-318-00	ELECT	33MF	20%	16V	
C063	1-101-006-00	CERAMIC	0.047MF		50V	
C065	1-161-013-00	CERAMIC	0.01MF	10%	25V	

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Ref.No.	Part No.	Description			Remark
C066	1-101-005-00	CERAMIC	0.022MF		50V
C067	1-161-013-00	CERAMIC	0.01MF	10%	25V
C068	1-161-013-00	CERAMIC	0.01MF	10%	25V
C069	1-161-013-00	CERAMIC	0.01MF	10%	25V
C070	1-123-356-00	ELECT	10MF	20%	16V
C071	1-101-004-00	CERAMIC	0.01MF		50V
C073	1-102-511-00	CERAMIC	13PF	5%	50V
C074	1-102-522-00	CERAMIC	51PF	5%	50V
C075	1-102-522-00	CERAMIC	51PF	5%	50V
C076	1-102-511-00	CERAMIC	13PF	5%	50V
C077	1-101-006-00	CERAMIC	0.047MF		50V
C078	1-123-356-00	ELECT	10MF	20%	16V
C079	1-123-307-00	ELECT	100MF	20%	10V
C080	1-123-380-00	ELECT	1MF	20%	50V
C083	1-123-296-00	ELECT	220MF	20%	6.3V
C084	1-123-296-00	ELECT	220MF	20%	6.3V
C085	1-102-511-00	CERAMIC	13PF	5%	50V
C086	1-102-522-00	CERAMIC	51PF	5%	50V
C087	1-102-522-00	CERAMIC	51PF	5%	50V
C088	1-102-511-00	CERAMIC	13PF	5%	50V
C092	1-102-529-00	CERAMIC	100PF	5%	50V
C093	1-123-332-00	ELECT	47MF	20%	16V
C094	1-101-004-00	CERAMIC	0.01MF		50V
C096	1-123-356-00	ELECT	10MF	20%	16V
C097	1-101-005-00	CERAMIC	0.022MF		50V
C098	1-123-318-00	ELECT	33MF	20%	16V
C099	1-123-328-00	ELECT	4.7MF	20%	25V
C100	1-102-519-00	CERAMIC	36PF	5%	50V
C101	1-102-529-00	CERAMIC	100PF	5%	50V
C103	1-102-508-00	CERAMIC	10PF	0.5PF	50V
C105	1-101-005-00	CERAMIC	0.022MF		50V
C106	1-123-328-00	ELECT	4.7MF	20%	25V
C107	1-102-976-00	CERAMIC	180PF	5%	50V
C108	1-102-823-00	CERAMIC	43PF	5%	50V
C109	1-102-821-00	CERAMIC	360PF	5%	50V
C111	1-102-851-00	CERAMIC	15PF	5%	50V
C113	1-101-059-00	CERAMIC	510PF	5%	50V
C115	1-123-328-00	ELECT	4.7MF	20%	25V
C117	1-101-006-00	CERAMIC	0.047MF		50V
C118	1-102-958-00	CERAMIC	20PF	5%	50V
C119	1-102-958-00	CERAMIC	20PF	5%	50V
C122	1-101-006-00	CERAMIC	0.047MF		50V
C123	1-102-513-00	CERAMIC	18PF	5%	50V
C124	1-102-958-00	CERAMIC	20PF	5%	50V
C125	1-102-958-00	CERAMIC	20PF	5%	50V
C126	1-102-114-00	CERAMIC	470PF	10%	50V
		CONNECTOR			
CN001	♠:1-508-848-00	PIN, CONNECTOR 6P			
CN002	♠:1-564-030-00	PIN, CONNECTOR 5P			
CN003	♠:1-564-028-00	PIN, CONNECTOR 3P			

Ref.No.	Part No.	Description	Remark
		DIODE	
D001	8-719-911-19	DIODE 1SS119	
D002	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119	
D004	8-719-911-19	DIODE 1SS119	
D005	8-719-000-12	DIODE MC931	
D007	8-719-911-19	DIODE 1SS119	
D008	8-719-911-19	DIODE 1SS119	
D010	8-719-911-19	DIODE 1SS119	
D011	8-719-911-19	DIODE 1SS119	
D012	=>8-719-100-68	DIODE RD13EB2	
		DELAY LINE	
DL001	1-415-312-00	DELAY LINE (1H)	
		IC	
IC001	8-758-620-00	IC CX-862	
IC002	8-759-601-34	IC CX-134A	
IC003	8-759-608-64	IC CX-864	
IC004	8-751-350-00	IC CX-135	
		COIL	
L001	1-408-429-00	MICRO INDUCTOR 470UH	
L002	1-408-878-00	MICRO INDUCTOR 0.33UH	
L003	1-408-878-00	MICRO INDUCTOR 0.33UH	
L004	1-408-421-00	MICRO INDUCTOR 100UH	
L005	1-408-425-00	MICRO INDUCTOR 220UH	
L006	1-408-425-00	MICRO INDUCTOR 220UH	
L007	1-407-502-00	MICRO INDUCTOR 6.8MMH	
L008	1-407-502-00	MICRO INDUCTOR 6.8MMH	
L009	1-408-414-00	MICRO INDUCTOR 27UH	
L010	1-408-414-00	MICRO INDUCTOR 27UH	
L012	1-407-717-00	MICRO INDUCTOR 1MMH	
L014	1-408-410-00	MICRO INDUCTOR 12UH	
L015	1-408-423-00	MICRO INDUCTOR 150UH	
L017	1-408-423-00	MICRO INDUCTOR 150UH	
L018	1-408-415-00	MICRO INDUCTOR 33UH	
L019	1-408-421-00	MICRO INDUCTOR 100UH	
L020	1-408-412-00	MICRO INDUCTOR 18UH	
L021	1-408-412-00	MICRO INDUCTOR 18UH	
L022	1-408-422-00	MICRO INDUCTOR 120UH	
L023	1-408-424-00	MICRO INDUCTOR 180UH	
L024	1-408-422-00	MICRO INDUCTOR 120UH	
L025	1-408-422-00	MICRO INDUCTOR 120UH	
L026	1-408-424-00	MICRO INDUCTOR 180UH	
L027	1-408-422-00	MICRO INDUCTOR 120UH	
L028	1-408-423-00	MICRO INDUCTOR 150UH	
L029	1-408-416-00	MICRO INDUCTOR 39UH	
L030	1-408-416-00	MICRO INDUCTOR 39UH	
L031	1-408-421-00	MICRO INDUCTOR 100UH	
L032	1-408-411-00	MICRO INDUCTOR 15UH	
L033	1-408-423-00	MICRO INDUCTOR 150UH	

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description	Remark
L034	1-408-417-00	MICRO INDUCTOR 47UH	
L035	1-408-416-00	MICRO INDUCTOR 39UH	
L036	1-407-170-XX	MICRO INDUCTOR 120UH	

TRANSISTOR

Ref.No.	Part No.	Description	Remark
Q001	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q003	=>8-729-245-83	TRANSISTOR 2SC2458	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q005	=>8-729-245-83	TRANSISTOR 2SC2458	
Q006	=>8-729-245-83	TRANSISTOR 2SC2458	
Q008	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q009	8-729-603-50	TRANSISTOR 2SC403SP	
Q010	8-729-603-50	TRANSISTOR 2SC403SP	
Q011	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q012	8-729-603-50	TRANSISTOR 2SC403SP	
Q013	8-729-603-50	TRANSISTOR 2SC403SP	
Q014	8-729-603-50	TRANSISTOR 2SC403SP	
Q015	8-729-603-50	TRANSISTOR 2SA844	
Q016	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q017	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q018	8-729-603-50	TRANSISTOR 2SC403SP	
Q019	8-729-603-50	TRANSISTOR 2SC403SP	
Q021	8-729-603-50	TRANSISTOR 2SC403SP	
Q022	8-729-603-50	TRANSISTOR 2SC403SP	
Q023	8-729-603-50	TRANSISTOR 2SC403SP	
Q024	8-729-603-50	TRANSISTOR 2SC403SP	
Q025	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q028	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q029	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q033	=>8-729-384-46	TRANSISTOR 2SA844-C	
Q034	8-729-603-50	TRANSISTOR 2SC403SP	
Q035	8-729-603-50	TRANSISTOR 2SC403SP	
Q036	8-729-603-50	TRANSISTOR 2SC403SP	
Q037	8-729-603-50	TRANSISTOR 2SC403SP	

RESISTOR

Ref.No.	Part No.	Description				Remark
R001	1-247-819-00	CARBON	330	5%	1/6W	
R002	1-247-783-00	CARBON	10	5%	1/6W	
R003	1-247-819-00	CARBON	330	5%	1/6W	
R004	1-247-783-00	CARBON	10	5%	1/6W	
R005	1-247-863-00	CARBON	22K	5%	1/6W	
R006	1-247-855-00	CARBON	10K	5%	1/6W	
R007	1-247-852-00	CARBON	7.5K	5%	1/6W	
R008	1-247-855-00	CARBON	10K	5%	1/6W	
R009	1-247-844-00	CARBON	3.6K	5%	1/6W	
R010	1-247-867-00	CARBON	33K	5%	1/6W	
R011	1-247-807-00	CARBON	100	5%	1/6W	
R012	1-247-855-00	CARBON	10K	5%	1/6W	
R013	1-247-855-00	CARBON	10K	5%	1/6W	
R014	1-247-831-00	CARBON	1K	5%	1/6W	
R015	1-247-827-00	CARBON	680	5%	1/6W	
R016	1-247-827-00	CARBON	680	5%	1/6W	
R017	1-247-835-00	CARBON	1.5K	5%	1/6W	
R018	1-247-835-00	CARBON	1.5K	5%	1/6W	
R019	1-247-844-00	CARBON	3.6K	5%	1/6W	
R020	1-247-844-00	CARBON	3.6K	5%	1/6W	
R021	1-247-831-00	CARBON	1K	5%	1/6W	
R022	1-247-867-00	CARBON	33K	5%	1/6W	
R023	1-247-871-00	CARBON	47K	5%	1/6W	
R024	1-247-847-00	CARBON	4.7K	5%	1/6W	
R025	1-247-847-00	CARBON	4.7K	5%	1/6W	
R026	1-247-855-00	CARBON	10K	5%	1/6W	
R027	1-247-847-00	CARBON	4.7K	5%	1/6W	
R028	1-247-855-00	CARBON	10K	5%	1/6W	
R029	1-247-824-00	CARBON	510	5%	1/6W	
R030	1-247-824-00	CARBON	510	5%	1/6W	
R031	1-247-779-00	CARBON	6.8	5%	1/6W	
R032	1-247-822-00	CARBON	430	5%	1/6W	
R033	1-247-815-00	CARBON	220	5%	1/6W	
R034 ⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W	F
R035	1-247-839-00	CARBON	2.2K	5%	1/6W	
R036	1-247-839-00	CARBON	2.2K	5%	1/6W	
R037	1-247-831-00	CARBON	1K	5%	1/6W	
R038	1-247-831-00	CARBON	1K	5%	1/6W	
R039	1-247-839-00	CARBON	2.2K	5%	1/6W	
R040	1-247-839-00	CARBON	2.2K	5%	1/6W	
R041	1-247-833-00	CARBON	1.2K	5%	1/6W	
R042 ⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W	F
R043	1-247-847-00	CARBON	4.7K	5%	1/6W	
R044	1-247-849-00	CARBON	5.6K	5%	1/6W	
R045	1-247-849-00	CARBON	5.6K	5%	1/6W	
R046	1-247-809-00	CARBON	120	5%	1/6W	
R047	1-247-844-00	CARBON	3.6K	5%	1/6W	
R048	1-247-839-00	CARBON	2.2K	5%	1/6W	
R049	1-247-814-00	CARBON	200	5%	1/6W	
R050	1-247-840-00	CARBON	2.4K	5%	1/6W	
R051	1-247-818-00	CARBON	300	5%	1/6W	
R052	1-247-834-00	CARBON	1.3K	5%	1/6W	
R053	1-247-830-00	CARBON	910	5%	1/6W	
R054	1-247-835-00	CARBON	1.5K	5%	1/6W	
R055	1-247-855-00	CARBON	10K	5%	1/6W	
R056	1-247-836-00	CARBON	1.6K	5%	1/6W	
R057	1-247-849-00	CARBON	5.6K	5%	1/6W	
R058	1-247-832-00	CARBON	1.1K	5%	1/6W	
R059	1-247-837-00	CARBON	1.8K	5%	1/6W	
R060	1-247-814-00	CARBON	200	5%	1/6W	
R061	1-247-839-00	CARBON	2.2K	5%	1/6W	
R062	1-247-810-00	CARBON	130	5%	1/6W	
R063	1-247-825-00	CARBON	560	5%	1/6W	
R064	1-247-839-00	CARBON	2.2K	5%	1/6W	
R065	1-247-842-00	CARBON	3K	5%	1/6W	
R066	1-247-821-00	CARBON	390	5%	1/6W	
R067	1-247-863-00	CARBON	22K	5%	1/6W	
R068	1-247-863-00	CARBON	22K	5%	1/6W	
R069	1-247-819-00	CARBON	330	5%	1/6W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RY-1 YC-25

Ref.No.	Part No.	Description				Remark
R071	1-247-812-00	CARBON	160	5%	1/6W	
R072	1-247-831-00	CARBON	1K	5%	1/6W	
R073	1-247-855-00	CARBON	10K	5%	1/6W	
R074	1-247-832-00	CARBON	1.1K	5%	1/6W	
R075	1-247-832-00	CARBON	1.1K	5%	1/6W	
R077	1-247-859-00	CARBON	15K	5%	1/6W	
R078	1-247-855-00	CARBON	10K	5%	1/6W	
R079	1-247-842-00	CARBON	3K	5%	1/6W	
R080	1-247-867-00	CARBON	33K	5%	1/6W	
R081	1-247-824-00	CARBON	510	5%	1/6W	
R082	1-247-838-00	CARBON	2K	5%	1/6W	
R086	1-247-811-00	CARBON	150	5%	1/6W	
R087	1-247-866-00	CARBON	30K	5%	1/6W	
R088	1-247-844-00	CARBON	3.6K	5%	1/6W	
R089	1-247-847-00	CARBON	4.7K	5%	1/6W	
R090	1-247-831-00	CARBON	1K	5%	1/6W	
R091	1-247-883-00	CARBON	150K	5%	1/6W	
R092	1-247-867-00	CARBON	33K	5%	1/6W	
R095	1-247-869-00	CARBON	39K	5%	1/6W	
R096	1-247-807-00	CARBON	100	5%	1/6W	
R099	1-247-849-00	CARBON	5.6K	5%	1/6W	
R100	1-247-817-00	CARBON	270	5%	1/6W	
R101	1-247-817-00	CARBON	270	5%	1/6W	
R102	1-247-861-00	CARBON	18K	5%	1/6W	
R103	1-247-824-00	CARBON	510	5%	1/6W	
R104	1-247-883-00	CARBON	150K	5%	1/6W	
R105	1-247-838-00	CARBON	2K	5%	1/6W	
R106	1-247-835-00	CARBON	1.5K	5%	1/6W	
R108	1-247-837-00	CARBON	1.8K	5%	1/6W	
R109	1-247-837-00	CARBON	1.8K	5%	1/6W	
R110	1-247-849-00	CARBON	5.6K	5%	1/6W	
R111	1-247-879-00	CARBON	100K	5%	1/6W	
R112	1-247-827-00	CARBON	680	5%	1/6W	
R113	1-247-831-00	CARBON	1K	5%	1/6W	
R115	1-247-833-00	CARBON	1.2K	5%	1/6W	
R116	1-247-826-00	CARBON	620	5%	1/6W	
R117	1-247-826-00	CARBON	620	5%	1/6W	
R118	1-247-837-00	CARBON	1.8K	5%	1/6W	
R119	1-247-837-00	CARBON	1.8K	5%	1/6W	
R122	1-247-823-00	CARBON	470	5%	1/6W	
R123	1-247-824-00	CARBON	510	5%	1/6W	
R126	1-247-845-00	CARBON	3.9K	5%	1/6W	
R134	1-247-869-00	CARBON	39K	5%	1/6W	
R135	1-247-866-00	CARBON	30K	5%	1/6W	
R136	1-247-831-00	CARBON	1K	5%	1/6W	
R137	1-247-831-00	CARBON	1K	5%	1/6W	
R138	1-247-835-00	CARBON	1.5K	5%	1/6W	
R139	1-247-831-00	CARBON	1K	5%	1/6W	
R140	1-247-831-00	CARBON	1K	5%	1/6W	
R141	1-247-831-00	CARBON	1K	5%	1/6W	
R150	1-247-874-00	CARBON	62K	5%	1/6W	
R151	1-247-874-00	CARBON	62K	5%	1/6W	

Ref.No.	Part No.	Description				Remark
R152	1-247-890-00	CARBON	300K	5%	1/6W	
R153	1-247-811-00	CARBON	150	5%	1/6W	
R154	1-247-834-00	CARBON	1.3K	5%	1/6W	
R155	1-247-837-00	CARBON	1.8K	5%	1/6W	
R156	1-247-817-00	CARBON	270	5%	1/6W	
R157	1-247-811-00	CARBON	150	5%	1/6W	
R158	1-247-829-00	CARBON	820	5%	1/6W	
R159	1-247-839-00	CARBON	2.2K	5%	1/6W	
R160	1-247-821-00	CARBON	390	5%	1/6W	
R162	1-247-831-00	CARBON	1K	5%	1/6W	
R163	1-247-863-00	CARBON	22K	5%	1/6W	
R164	1-247-863-00	CARBON	22K	5%	1/6W	
R165	1-247-834-00	CARBON	1.3K	5%	1/6W	
R166	1-247-807-00	CARBON	100	5%	1/6W	
R167	1-247-834-00	CARBON	1.3K	5%	1/6W	
R169	1-247-812-00	CARBON	160	5%	1/6W	
R170	1-247-819-00	CARBON	330	5%	1/6W	
R171	1-247-831-00	CARBON	1K	5%	1/6W	
R172	1-247-855-00	CARBON	10K	5%	1/6W	
R173	1-247-839-00	CARBON	2.2K	5%	1/6W	
R177	1-247-831-00	CARBON	1K	5%	1/6W	
R178	1-247-825-00	CARBON	560	5%	1/6W	
R179	1-247-857-00	CARBON	12K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-226-847-00	RES, ADJ, CARBON 1K
RV002	1-226-848-00	RES, ADJ, CARBON 2.2K
RV003	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV004	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV005	1-228-746-00	RES, ADJ, CARBON 2.2K
RV006	1-228-753-00	RES, ADJ, CARBON 470K
RV007	1-228-745-00	RES, ADJ, CARBON 1K
RV008	1-226-851-00	RES, ADJ, CARBON 10K
RV009	1-228-750-00	RES, ADJ, CARBON 47K
RV010	1-228-750-00	RES, ADJ, CARBON 47K
RV011	1-228-994-00	RES, ADJ, METAL GLAZE 10K
RV012	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV013	1-228-745-00	RES, ADJ, CARBON 1K
RV014	1-226-850-00	RES, ADJ, CARBON 4.7K

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●:A-6711-450-A YC-25 BOARD, COMPLETE
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1-536-796-00 TERMINAL BOARD, CONTROL PANEL

FILTER

BPF001 1-235-098-00 FILTER, BAND PASS

CAPACITOR

C001	1-102-953-00	CERAMIC	18PF	5%	50V
C002	1-101-004-00	CERAMIC	0.01MF		50V
C003	1-102-525-00	CERAMIC	68PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description			Remark
C004	1-102-525-00	CERAMIC	68PF	5%	50V
C005	1-102-110-00	CERAMIC	220PF	10%	50V
C006	1-101-004-00	CERAMIC	0.01MF		50V
C007	1-161-021-00	CERAMIC	0.047MF	10%	25V
C008	1-123-356-00	ELECT	10MF	20%	16V
C009	1-123-356-00	ELECT	10MF	20%	25V
C010	1-123-356-00	ELECT	10MF	20%	25V
C011	1-123-379-00	ELECT	0.47MF	20%	50V
C012	1-123-379-00	ELECT	0.47MF	20%	50V
C013	1-108-603-00	MYLAR	0.1MF	5%	50V
C014	1-123-354-00	ELECT	3.3MF	20%	50V
C015	1-101-004-00	CERAMIC	0.01MF		50V
C016	1-101-974-00	CERAMIC	20PF	5%	50V
C017	1-101-006-00	CERAMIC	0.047MF		50V
C018	1-101-006-00	CERAMIC	0.047MF		50V
C019	1-101-004-00	CERAMIC	0.01MF		50V
C021	1-101-003-00	CERAMIC	0.0047MF		50V
C022	1-123-380-00	ELECT	1MF	20%	50V
C023	1-101-004-00	CERAMIC	0.01MF		50V
C024	1-101-004-00	CERAMIC	0.01MF		50V
C025	1-101-004-00	CERAMIC	0.01MF		50V
C026	1-102-850-00	CERAMIC	56PF	5%	50V
C027	1-101-004-00	CERAMIC	0.01MF		50V
C028	1-101-004-00	CERAMIC	0.01MF		50V
C029	1-101-004-00	CERAMIC	0.01MF		50V
C030	1-102-850-00	CERAMIC	56PF	5%	50V
C031	1-101-004-00	CERAMIC	0.01MF		50V
C032	1-101-004-00	CERAMIC	0.01MF		50V
C033	1-101-005-00	CERAMIC	0.022MF		50V
C034	1-102-113-00	CERAMIC	390PF	10%	50V
C035	1-101-004-00	CERAMIC	0.01MF		50V
C036	1-161-021-00	CERAMIC	0.047MF	10%	25V
C037	1-123-318-00	ELECT	33MF	20%	16V
C038	1-101-004-00	CERAMIC	0.01MF		50V
C039	1-101-004-00	CERAMIC	0.01MF		50V
C040	1-101-004-00	CERAMIC	0.01MF		50V
C041	1-101-004-00	CERAMIC	0.01MF		50V
C043	1-102-508-00	CERAMIC	10PF	0.5PF	50V
C044	1-161-025-00	CERAMIC	0.1MF	10%	25V
C045	1-161-025-00	CERAMIC	0.1MF	10%	25V
C046	1-123-354-00	ELECT	3.3MF	20%	50V
C047	1-101-005-00	CERAMIC	0.022MF		50V
C048	1-101-004-00	CERAMIC	0.01MF		50V
C049	1-101-004-00	CERAMIC	0.01MF		50V
C050	1-101-004-00	CERAMIC	0.01MF		50V
C051	1-123-332-00	ELECT	47MF	20%	16V
C052	1-101-001-00	CERAMIC	0.001MF		50V
C053	1-101-006-00	CERAMIC	0.047MF		50V
C054	1-123-333-00	ELECT	100MF	20%	16V
C055	1-123-318-00	ELECT	33MF	20%	16V
C056	1-101-001-00	CERAMIC	0.001MF		50V
C057	1-131-341-00	ELECT(SOLID)	0.1MF	10%	25V
C058	1-101-005-00	CERAMIC	0.022MF		50V
C059	1-123-356-00	ELECT	10MF	20%	16V
C060	1-123-330-00	ELECT	22MF	20%	16V
C061	1-102-512-00	CERAMIC	16PF	5%	50V
C062	1-101-005-00	CERAMIC	0.022MF		50V
C064	1-101-001-00	CERAMIC	0.001MF		50V
C065	1-101-004-00	CERAMIC	0.01MF		50V
C066	1-123-381-00	ELECT	2.2MF	20%	50V
C067	1-123-356-00	ELECT	10MF	20%	16V
C068	1-108-589-00	MYLAR	0.027MF	5%	50V
C069	1-123-306-00	ELECT	47MF	20%	10V
C070	1-101-006-00	CERAMIC	0.047MF		50V
C071	1-101-004-00	CERAMIC	0.01MF		50V
C072	1-101-005-00	CERAMIC	0.022MF		50V
C073	1-101-004-00	CERAMIC	0.01MF		50V
C074	1-101-004-00	CERAMIC	0.01MF		50V
C075	1-101-004-00	CERAMIC	0.01MF		50V
C076	1-101-004-00	CERAMIC	0.01MF		50V
C077	1-101-006-00	CERAMIC	0.047MF		50V
C078	1-123-318-00	ELECT	33MF	20%	16V
C079	1-101-004-00	CERAMIC	0.01MF		50V
C080	1-102-947-00	CERAMIC	10PF	5%	50V
C081	1-102-529-00	CERAMIC	100PF	5%	50V
C082	1-101-004-00	CERAMIC	0.01MF		50V
C083	1-101-004-00	CERAMIC	0.01MF		50V
C084	1-101-004-00	CERAMIC	0.01MF		50V
C085	1-101-004-00	CERAMIC	0.01MF		50V
C086	1-102-979-00	CERAMIC	240PF	5%	50V
C087	1-101-006-00	CERAMIC	0.047MF		50V
C088	1-101-006-00	CERAMIC	0.047MF		50V
C089	1-102-947-00	CERAMIC	10PF	5%	50V
C090	1-102-947-00	CERAMIC	10PF	5%	50V
C092	1-101-004-00	CERAMIC	0.01MF		50V
C093	1-101-004-00	CERAMIC	0.01MF		50V
C094	1-102-129-00	CERAMIC	0.01MF	10%	50V
C095	1-102-523-00	CERAMIC	56PF	5%	50V
C096	1-102-529-00	CERAMIC	100PF	5%	50V
C097	1-102-529-00	CERAMIC	100PF	5%	50V
C098	1-102-530-00	CERAMIC	120PF	5%	50V
C099	1-101-004-00	CERAMIC	0.01MF		50V
C100	1-101-006-00	CERAMIC	0.047MF		50V
C101	1-123-356-00	ELECT	10MF	20%	16V
C102	1-102-531-00	CERAMIC	150PF	5%	50V
C103	1-108-555-00	MYLAR	0.001MF	5%	50V
C104	1-108-555-00	MYLAR	0.001MF	5%	50V
C105	1-102-947-00	CERAMIC	10PF	5%	50V
C106	1-123-306-00	ELECT	47MF	20%	10V
C107	1-101-880-00	CERAMIC	47PF	5%	50V
C108	1-123-328-00	ELECT	4.7MF	20%	25V
C109	1-161-025-00	CERAMIC	0.1MF	10%	25V
C110	1-102-973-00	CERAMIC	100PF	5%	50V
C111	1-161-025-00	CERAMIC	0.1MF	10%	25V
C112	1-108-595-00	MYLAR	0.047MF	5%	50V
C113	1-101-059-00	CERAMIC	510PF	5%	50V

When indicating parts by reference number, please include the board name.

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Ref.No.	Part No.	Description			Remark
C114	1-102-114-00	CERAMIC	470PF	10%	50V
C115	1-102-977-00	CERAMIC	200PF	5%	50V
C116	1-102-114-00	CERAMIC	470PF	10%	50V
C117	1-123-328-00	ELECT	4.7MF	20%	25V
C118	1-123-356-00	ELECT	10MF	20%	16V
C119	1-123-356-00	ELECT	10MF	20%	16V
C120	1-123-318-00	ELECT	33MF	20%	16V
C121	1-123-318-00	ELECT	33MF	20%	16V
C122	1-123-328-00	ELECT	4.7MF	20%	25V
C123	1-123-328-00	ELECT	4.7MF	20%	25V
C124	1-101-004-00	CERAMIC	0.01MF		50V
C125	1-101-006-00	CERAMIC	0.047MF		50V
C126	1-101-884-00	CERAMIC	56PF	5%	50V
C127	1-101-006-00	CERAMIC	0.047MF		50V
C128	1-101-006-00	CERAMIC	0.047MF		50V
C129	1-102-960-00	CERAMIC	24PF	5%	50V
C130	1-101-004-00	CERAMIC	0.01MF		50V
C131	1-101-006-00	CERAMIC	0.047MF		50V
C132	1-101-884-00	CERAMIC	56PF	5%	50V
C133	1-102-937-00	CERAMIC	4PF	0.25PF	50V
C134	1-101-004-00	CERAMIC	0.01MF		50V
C135	1-101-004-00	CERAMIC	0.01MF		50V
C136	1-123-380-00	ELECT	1MF	20%	50V
C137	1-108-569-00	MYLAR	0.0039MF	5%	50V
C138	1-123-356-00	ELECT	10MF	20%	16V
C139	1-123-332-00	ELECT	47MF	20%	16V
C140	1-101-006-00	CERAMIC	0.047MF		50V
C141	1-123-318-00	ELECT	33MF	20%	16V
C142	1-101-005-00	CERAMIC	0.022MF		50V
C143	1-123-333-00	ELECT	100MF	20%	16V
C144	1-101-004-00	CERAMIC	0.01MF		50V
C145	1-161-025-00	CERAMIC	0.1MF	10%	25V
C147	1-123-330-00	ELECT	22MF	20%	16V
C148	1-123-356-00	ELECT	10MF	20%	25V
C150	1-123-356-00	ELECT	10MF	20%	16V
C155	1-123-311-00	ELECT	1000MF	20%	10V
C157	1-123-356-00	ELECT	10MF	20%	16V
C159	1-123-356-00	ELECT	10MF	20%	16V
C161	1-123-356-00	ELECT	10MF	20%	16V
C162	1-161-021-00	CERAMIC	0.047MF	10%	25V
C163	1-101-004-00	CERAMIC	0.01MF		50V
C164	1-101-006-00	CERAMIC	0.047MF		50V
C167	1-101-006-00	CERAMIC	0.047MF		50V
C168	1-123-356-00	ELECT	10MF	20%	16V
C169	1-101-002-00	CERAMIC	0.0022MF		50V
C170	1-102-904-00	CERAMIC	110PF	5%	50V
C301	1-101-004-00	CERAMIC	0.01MF		50V
C302	1-102-811-61	CERAMIC	9PF	1PF	50V
C303	1-123-328-00	ELECT	4.7MF	20%	25V
C304	1-101-006-00	CERAMIC	0.047MF		50V
C305	1-161-021-00	CERAMIC	0.047MF	10%	25V
C306	1-101-006-00	CERAMIC	0.047MF		50V
C307	1-123-356-00	ELECT	10MF	20%	16V

Ref.No.	Part No.	Description			Remark
C308	1-161-021-00	CERAMIC	0.047MF	10%	25V
C309	1-161-021-00	CERAMIC	0.047MF	10%	25V
C310	1-161-021-00	CERAMIC	0.047MF	10%	25V
C311	1-161-021-00	CERAMIC	0.047MF	10%	25V
C314	1-102-978-00	CERAMIC	220PF	5%	50V
C315	1-101-004-00	CERAMIC	0.01MF		50V
C316	1-101-004-00	CERAMIC	0.01MF		50V
C317	1-102-520-00	CERAMIC	39PF	5%	50V
C318	1-101-006-00	CERAMIC	0.047MF		50V

FILTER

CF001	1-527-874-00	FILTER, CERAMIC
CF002	1-527-875-00	FILTER, CERAMIC
CF003	1-527-998-00	FILTER, CERAMIC

CONNECTOR

CN001	♠:1-564-032-00	PIN, CONNECTOR 7P
CN002	♠:1-564-033-00	PIN, CONNECTOR 8P
CN003	♠:1-560-891-00	PIN, CONNECTOR 3P
CN004	♠:1-560-895-00	PIN, CONNECTOR 7P
CN005	♠:1-560-893-00	PIN, CONNECTOR 5P
CN006	♠:1-560-892-00	PIN, CONNECTOR 4P
CN007	♠:1-560-894-00	PIN, CONNECTOR 6P
CN008	♠:1-560-895-00	PIN, CONNECTOR 7P

JACK

CN009	1-507-840-00	JACK, MINIATURE

TRIMMER

CV001	1-141-275-00	CAP, TRIMMER

DIODE

D001	=>8-719-911-19	DIODE 1SS119
D002	=>8-719-911-19	DIODE 1SS119
D004	=>8-719-100-35	DIODE RD5.6EB2
D005	8-719-000-12	DIODE MC931
D007	8-719-000-06	DIODE MC921
D009	8-719-000-06	DIODE MC921
D013	=>8-719-911-19	DIODE 1SS119
D016	=>8-719-911-19	DIODE 1SS119
D017	=>8-719-911-19	DIODE 1SS119
D018	=>8-719-911-19	DIODE 1SS119
D019	=>8-719-911-19	DIODE 1SS119
D020	=>8-719-911-19	DIODE 1SS119
D022	=>8-719-911-19	DIODE 1SS119
D028	=>8-719-100-57	DIODE RD10EB2
D031	=>8-719-911-19	DIODE 1SS119
D032	=>8-719-911-19	DIODE 1SS119
D035	=>8-719-911-19	DIODE 1SS119
D036	=>8-719-911-19	DIODE 1SS119
D037	=>8-719-911-19	DIODE 1SS119

DELAY LINE

DL001	1-415-282-00	DELAY LINE (2H)
DL002	1-415-313-00	DELAY LINE (1H)

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description	Remark
		IC	
IC001	=>8-758-691-00	IC CX-869A	
IC002	8-759-208-94	IC CX-894	
IC003	8-759-608-82	IC CX-882	
IC004	8-752-000-80	IC CX20008	
IC005	8-757-945-00	IC CX-7945	
IC006	8-759-600-08	IC CX-870A	
IC007	8-759-904-95	IC BA7007	
IC008	8-759-208-94	IC CX-894	
IC009	8-759-208-94	IC CX-894	
IC010	8-759-273-20	IC TA7320P	
IC011	8-759-240-13	IC TC4013BP	
IC012	8-759-240-69	IC TC4069UBP	
IC013	8-759-208-67	IC CX-867	
IC014	8-759-908-68	IC CX-868	
IC015	=>8-750-000-74	IC CX20061	
IC016	8-759-979-26	IC CX-7926	
		COIL	
L001	1-408-420-00	MICRO INDUCTOR 82UH	
L002	1-408-427-00	MICRO INDUCTOR 330UH	
L003	1-407-503-00	MICRO INDUCTOR 8.2MMH	
L004	1-408-408-00	MICRO INDUCTOR 8.2UH	
L005	1-408-429-00	MICRO INDUCTOR 470UH	
L006	1-407-503-00	MICRO INDUCTOR 8.2MMH	
L007	1-408-412-00	MICRO INDUCTOR 18UH	
L008	1-408-426-00	MICRO INDUCTOR 270UH	
L009	1-408-429-00	MICRO INDUCTOR 470UH	
L010	1-407-503-00	MICRO INDUCTOR 8.2MMH	
L011	1-408-408-00	MICRO INDUCTOR 8.2UH	
L012	1-408-406-00	MICRO INDUCTOR 5.6UH	
L013	1-407-496-00	MICRO INDUCTOR 2.2MMH	
L014	1-407-500-00	MICRO INDUCTOR 4.7MMH	
L015	1-407-163-XX	MICRO INDUCTOR 33UH	
L101	1-408-418-00	MICRO INDUCTOR 56UH	
		FILTER	
LPF001	1-235-097-00	FILTER, LOW PASS	
		VARIABLE COIL	
LV001	1-408-513-00	COIL (VARIABLE) 22UH	
LV002	1-408-512-00	COIL (VARIABLE) 10UH	
LV003	1-408-513-00	COIL (VARIABLE) 22UH	
LV004	1-407-291-00	MICRO INDUCTOR 15MMH	
		IC LINK	
PS001⚠	1-532-685-11	LINK, IC P-N20	

Ref.No.	Part No.	Description	Remark
		TRANSISTOR	
Q001	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	=>8-729-245-83	TRANSISTOR 2SC2458	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q006	8-729-603-50	TRANSISTOR 2SC403SP	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458	
Q008	=>8-729-245-83	TRANSISTOR 2SC2458	
Q009	=>8-729-245-83	TRANSISTOR 2SC2458	
Q010	=>8-729-245-83	TRANSISTOR 2SC2458	
Q011	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q012	8-729-245-83	TRANSISTOR 2SC2458	
Q013	8-729-603-50	TRANSISTOR 2SC403SP	
Q014	8-729-603-50	TRANSISTOR 2SC403SP	
Q015	8-729-603-50	TRANSISTOR 2SC403SP	
Q016	=>8-729-245-83	TRANSISTOR 2SC2458	
Q017	=>8-729-245-83	TRANSISTOR 2SC2458	
Q018	=>8-729-245-83	TRANSISTOR 2SC2458	
Q019	=>8-729-245-83	TRANSISTOR 2SC2458	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-245-83	TRANSISTOR 2SC2458	
Q025	=>8-729-245-83	TRANSISTOR 2SC2458	
Q026	=>8-729-245-83	TRANSISTOR 2SC2458	
Q027	=>8-729-245-83	TRANSISTOR 2SC2458	
Q028	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q029	=>8-729-245-83	TRANSISTOR 2SC2458	
Q030	=>8-729-245-83	TRANSISTOR 2SC2458	
Q031	=>8-729-245-83	TRANSISTOR 2SC2458	
Q032	=>8-729-245-83	TRANSISTOR 2SC2458	
Q033	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q034	=>8-729-245-83	TRANSISTOR 2SC2458	
Q035	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q036	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q037	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q038	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q039	=>8-729-245-83	TRANSISTOR 2SC2458	
Q040	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q041	=>8-729-245-83	TRANSISTOR 2SC2458	
Q042	=>8-729-245-83	TRANSISTOR 2SC2458	
Q043	=>8-729-245-83	TRANSISTOR 2SC2458	
Q044	=>8-729-245-83	TRANSISTOR 2SC2458	
Q045	=>8-729-245-83	TRANSISTOR 2SC2458	
Q046	=>8-729-245-83	TRANSISTOR 2SC2458	
Q047	=>8-729-245-83	TRANSISTOR 2SC2458	
Q048	=>8-729-245-83	TRANSISTOR 2SC2458	
Q049	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q050	=>8-729-245-83	TRANSISTOR 2SC2458	
Q051	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q052	=>8-729-245-83	TRANSISTOR 2SC2458	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

YC-25

Ref.No.	Part No.	Description		Remark
Q053	=>8-729-245-83	TRANSISTOR	2SC2458	
Q054	=>8-729-245-83	TRANSISTOR	2SC2458	
Q055	=>8-729-113-33	TRANSISTOR	2SB733-4	
Q056	=>8-729-113-33	TRANSISTOR	2SB733-4	
Q068	=>8-729-245-83	TRANSISTOR	2SC2458	
Q069	=>8-729-204-83	TRANSISTOR	2SA1048-GR	
Q072	=>8-729-245-83	TRANSISTOR	2SC2458	
Q073	=>8-729-245-83	TRANSISTOR	2SC2458	

RESISTOR

Ref.No.	Part No.	Description				Remark
R001	1-247-831-00	CARBON	1K	5%	1/6W	
R002	1-247-831-00	CARBON	1K	5%	1/6W	
R003	1-247-821-00	CARBON	390	5%	1/6W	
R004	1-247-835-00	CARBON	1.5K	5%	1/6W	
R005	1-247-855-00	CARBON	10K	5%	1/6W	
R006	1-247-867-00	CARBON	33K	5%	1/6W	
R007	1-247-855-00	CARBON	10K	5%	1/6W	
R008	1-247-831-00	CARBON	1K	5%	1/6W	
R009	1-247-831-00	CARBON	1K	5%	1/6W	
R010	1-247-870-00	CARBON	43K	5%	1/6W	
R011	1-247-865-00	CARBON	27K	5%	1/6W	
R012	1-247-875-00	CARBON	68K	5%	1/6W	
R013	1-247-867-00	CARBON	33K	5%	1/6W	
R014	1-247-867-00	CARBON	33K	5%	1/6W	
R015	1-247-867-00	CARBON	33K	5%	1/6W	
R016	1-247-867-00	CARBON	33K	5%	1/6W	
R018	1-247-873-00	CARBON	56K	5%	1/6W	
R019	1-247-873-00	CARBON	56K	5%	1/6W	
R020	1-247-847-00	CARBON	4.7K	5%	1/6W	
R021	1-247-831-00	CARBON	1K	5%	1/6W	
R022	1-247-873-00	CARBON	56K	5%	1/6W	
R023	1-247-863-00	CARBON	22K	5%	1/6W	
R024	1-247-873-00	CARBON	56K	5%	1/6W	
R025	1-247-871-00	CARBON	47K	5%	1/6W	
R026	1-247-871-00	CARBON	47K	5%	1/6W	
R027	1-247-869-00	CARBON	39K	5%	1/6W	
R028	1-247-871-00	CARBON	47K	5%	1/6W	
R029	1-247-852-00	CARBON	7.5K	5%	1/6W	
R030	1-247-842-00	CARBON	3K	5%	1/6W	
R031	1-247-849-00	CARBON	5.6K	5%	1/6W	
R032	1-247-817-00	CARBON	270	5%	1/6W	
R033	1-247-823-00	CARBON	470	5%	1/6W	
R034	1-247-797-00	CARBON	39	5%	1/6W	
R035	1-247-848-00	CARBON	5.1K	5%	1/6W	
R036	1-247-868-00	CARBON	36K	5%	1/6W	
R037	1-247-831-00	CARBON	1K	5%	1/6W	
R038	1-247-814-00	CARBON	200	5%	1/6W	
R039	1-247-855-00	CARBON	10K	5%	1/6W	
R040	1-247-862-00	CARBON	20K	5%	1/6W	
R041	1-247-824-00	CARBON	510	5%	1/6W	
R042	1-247-809-00	CARBON	120	5%	1/6W	
R043	1-247-770-00	CARBON	3	5%	1/6W	
R044	1-247-847-00	CARBON	4.7K	5%	1/6W	
R045	1-247-863-00	CARBON	22K	5%	1/6W	
R047	1-247-821-00	CARBON	390	5%	1/6W	
R048	1-247-839-00	CARBON	2.2K	5%	1/6W	
R049	1-247-821-00	CARBON	390	5%	1/6W	
R050	1-247-821-00	CARBON	390	5%	1/6W	
R051	1-247-821-00	CARBON	390	5%	1/6W	
R052	1-247-821-00	CARBON	390	5%	1/6W	
R053	1-247-821-00	CARBON	390	5%	1/6W	
R054	1-247-839-00	CARBON	2.2K	5%	1/6W	
R055	1-247-839-00	CARBON	2.2K	5%	1/6W	
R056	1-247-867-00	CARBON	33K	5%	1/6W	
R057	1-247-855-00	CARBON	10K	5%	1/6W	
R058	1-247-867-00	CARBON	33K	5%	1/6W	
R059	1-247-855-00	CARBON	10K	5%	1/6W	
R060	1-247-855-00	CARBON	10K	5%	1/6W	
R061	1-247-867-00	CARBON	33K	5%	1/6W	
R062	1-247-855-00	CARBON	10K	5%	1/6W	
R063	1-247-841-00	CARBON	2.7K	5%	1/6W	
R064	1-247-831-00	CARBON	1K	5%	1/6W	
R066	1-247-831-00	CARBON	1K	5%	1/6W	
R067	1-247-886-00	CARBON	200K	5%	1/6W	
R068	1-247-839-00	CARBON	2.2K	5%	1/6W	
R069	1-247-831-00	CARBON	1K	5%	1/6W	
R070	1-247-831-00	CARBON	1K	5%	1/6W	
R071	1-247-858-00	CARBON	13K	5%	1/6W	
R072	1-247-879-00	CARBON	100K	5%	1/6W	
R073	1-247-862-00	CARBON	20K	5%	1/6W	
R074	1-247-863-00	CARBON	22K	5%	1/6W	
R075	1-247-842-00	CARBON	3K	5%	1/6W	
R076	1-247-871-00	CARBON	47K	5%	1/6W	
R077	1-247-839-00	CARBON	2.2K	5%	1/6W	
R078	1-247-839-00	CARBON	2.2K	5%	1/6W	
R079	1-247-839-00	CARBON	2.2K	5%	1/6W	
R080	1-247-864-00	CARBON	24K	5%	1/6W	
R081	1-247-831-00	CARBON	1K	5%	1/6W	
R082	1-247-831-00	CARBON	1K	5%	1/6W	
R083	1-247-847-00	CARBON	4.7K	5%	1/6W	
R084	1-247-855-00	CARBON	10K	5%	1/6W	
R085	1-247-867-00	CARBON	33K	5%	1/6W	
R086	1-247-823-00	CARBON	470	5%	1/6W	
R087	1-247-838-00	CARBON	2K	5%	1/6W	
R088	1-247-875-00	CARBON	68K	5%	1/6W	
R089	1-247-867-00	CARBON	33K	5%	1/6W	
R090	1-247-831-00	CARBON	1K	5%	1/6W	
R091	1-247-879-00	CARBON	100K	5%	1/6W	
R092	1-247-846-00	CARBON	4.3K	5%	1/6W	
R093	1-247-835-00	CARBON	1.5K	5%	1/6W	
R094	1-247-855-00	CARBON	10K	5%	1/6W	
R095	1-247-853-00	CARBON	8.2K	5%	1/6W	
R096	1-247-855-00	CARBON	10K	5%	1/6W	
R097	1-247-855-00	CARBON	10K	5%	1/6W	
R098	1-247-867-00	CARBON	33K	5%	1/6W	
R099	1-247-831-00	CARBON	1K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
R100	1-247-855-00	CARBON	10K	5%	1/6W	
R101	1-247-866-00	CARBON	30K	5%	1/6W	
R102	1-247-835-00	CARBON	1.5K	5%	1/6W	
R103	1-247-839-00	CARBON	2.2K	5%	1/6W	
R104	1-247-807-00	CARBON	100	5%	1/6W	
R105	1-247-855-00	CARBON	10K	5%	1/6W	
R106	1-247-831-00	CARBON	1K	5%	1/6W	
R107	1-247-821-00	CARBON	390	5%	1/6W	
R108	1-247-821-00	CARBON	390	5%	1/6W	
R109	1-247-831-00	CARBON	1K	5%	1/6W	
R110	1-247-835-00	CARBON	1.5K	5%	1/6W	
R111	1-247-831-00	CARBON	1K	5%	1/6W	
R112	1-247-855-00	CARBON	10K	5%	1/6W	
R113	1-247-863-00	CARBON	22K	5%	1/6W	
R114	1-247-855-00	CARBON	10K	5%	1/6W	
R115	1-247-863-00	CARBON	22K	5%	1/6W	
R116	1-247-867-00	CARBON	33K	5%	1/6W	
R117	1-247-867-00	CARBON	33K	5%	1/6W	
R118	1-247-867-00	CARBON	33K	5%	1/6W	
R119	1-247-843-00	CARBON	3.3K	5%	1/6W	
R120	1-247-855-00	CARBON	10K	5%	1/6W	
R121	1-247-855-00	CARBON	10K	5%	1/6W	
R122	1-247-867-00	CARBON	33K	5%	1/6W	
R123	1-247-831-00	CARBON	1K	5%	1/6W	
R124	1-247-825-00	CARBON	560	5%	1/6W	
R125	1-247-860-00	CARBON	16K	5%	1/6W	
R126	1-247-873-00	CARBON	56K	5%	1/6W	
R127	1-247-831-00	CARBON	1K	5%	1/6W	
R128	1-247-824-00	CARBON	510	5%	1/6W	
R129	1-247-838-00	CARBON	2K	5%	1/6W	
R130	1-247-838-00	CARBON	2K	5%	1/6W	
R131	1-247-855-00	CARBON	10K	5%	1/6W	
R132	1-247-855-00	CARBON	10K	5%	1/6W	
R133	1-247-843-00	CARBON	3.3K	5%	1/6W	
R134	1-247-855-00	CARBON	10K	5%	1/6W	
R135	1-247-843-00	CARBON	3.3K	5%	1/6W	
R136	1-247-855-00	CARBON	10K	5%	1/6W	
R137	1-247-855-00	CARBON	10K	5%	1/6W	
R138	1-247-855-00	CARBON	10K	5%	1/6W	
R139	1-247-823-00	CARBON	470	5%	1/6W	
R140	1-247-823-00	CARBON	470	5%	1/6W	
R141	1-247-859-00	CARBON	15K	5%	1/6W	
R142	1-247-864-00	CARBON	24K	5%	1/6W	
R143	1-247-831-00	CARBON	1K	5%	1/6W	
R144	1-247-826-00	CARBON	620	5%	1/6W	
R145	1-247-838-00	CARBON	2K	5%	1/6W	
R146	1-247-844-00	CARBON	3.6K	5%	1/6W	
R147	1-247-824-00	CARBON	510	5%	1/6W	
R148	1-247-824-00	CARBON	510	5%	1/6W	
R149	1-247-824-00	CARBON	510	5%	1/6W	
R150	1-247-824-00	CARBON	510	5%	1/6W	
R151	1-247-855-00	CARBON	10K	5%	1/6W	
R152	1-247-855-00	CARBON	10K	5%	1/6W	
R153	1-247-831-00	CARBON	1K	5%	1/6W	
R154	1-247-855-00	CARBON	10K	5%	1/6W	
R155	1-247-855-00	CARBON	10K	5%	1/6W	
R156	1-247-824-00	CARBON	510	5%	1/6W	
R157	1-247-824-00	CARBON	510	5%	1/6W	
R158	1-247-815-00	CARBON	220	5%	1/6W	
R159	1-247-848-00	CARBON	5.1K	5%	1/6W	
R160	1-247-871-00	CARBON	47K	5%	1/6W	
R161	1-247-855-00	CARBON	10K	5%	1/6W	
R162	1-247-841-00	CARBON	2.7K	5%	1/6W	
R163	1-247-850-00	CARBON	6.2K	5%	1/6W	
R164	1-247-848-00	CARBON	5.1K	5%	1/6W	
R165	1-247-841-00	CARBON	2.7K	5%	1/6W	
R166	1-247-875-00	CARBON	68K	5%	1/6W	
R167	1-247-859-00	CARBON	15K	5%	1/6W	
R168	1-247-831-00	CARBON	1K	5%	1/6W	
R169	1-247-839-00	CARBON	2.2K	5%	1/6W	
R170	1-247-882-00	CARBON	130K	5%	1/6W	
R171	1-247-879-00	CARBON	100K	5%	1/6W	
R172	1-247-895-00	CARBON	470K	5%	1/6W	
R173	1-247-857-00	CARBON	12K	5%	1/6W	
R174	1-247-838-00	CARBON	2K	5%	1/6W	
R175	1-247-869-00	CARBON	39K	5%	1/6W	
R176	1-247-878-00	CARBON	91K	5%	1/6W	
R177	1-247-847-00	CARBON	4.7K	5%	1/6W	
R178	1-247-859-00	CARBON	15K	5%	1/6W	
R179	1-247-855-00	CARBON	10K	5%	1/6W	
R180	1-247-879-00	CARBON	100K	5%	1/6W	
R181	1-247-875-00	CARBON	68K	5%	1/6W	
R182	1-247-855-00	CARBON	10K	5%	1/6W	
R183	1-247-867-00	CARBON	33K	5%	1/6W	
R184	1-247-828-00	CARBON	750	5%	1/6W	
R185	1-247-831-00	CARBON	1K	5%	1/6W	
R186	1-247-830-00	CARBON	910	5%	1/6W	
R187	1-247-853-00	CARBON	8.2K	5%	1/6W	
R188	1-247-855-00	CARBON	10K	5%	1/6W	
R189	1-247-858-00	CARBON	13K	5%	1/6W	
R190	1-247-875-00	CARBON	68K	5%	1/6W	
R191	1-247-882-00	CARBON	130K	5%	1/6W	
R192	1-247-887-00	CARBON	220K	5%	1/6W	
R193	1-247-831-00	CARBON	1K	5%	1/6W	
R194	1-247-831-00	CARBON	1K	5%	1/6W	
R195	1-247-830-00	CARBON	910	5%	1/6W	
R196	1-247-837-00	CARBON	1.8K	5%	1/6W	
R197	1-247-822-00	CARBON	430	5%	1/6W	
R198	1-247-855-00	CARBON	10K	5%	1/6W	
R199	1-247-838-00	CARBON	2K	5%	1/6W	
R200	1-247-873-00	CARBON	56K	5%	1/6W	
R201	1-247-873-00	CARBON	56K	5%	1/6W	
R202	1-247-879-00	CARBON	100K	5%	1/6W	
R203	1-247-879-00	CARBON	100K	5%	1/6W	
R204	1-247-855-00	CARBON	10K	5%	1/6W	
R205	1-247-871-00	CARBON	47K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
R206	1-247-879-00	CARBON	100K	5%	1/6W	
R207	1-247-855-00	CARBON	10K	5%	1/6W	
R209	1-247-814-00	CARBON	200	5%	1/6W	
R210	1-247-808-00	CARBON	110	5%	1/6W	
R211	1-247-833-00	CARBON	1.2K	5%	1/6W	
R212	1-247-863-00	CARBON	22K	5%	1/6W	
R213	1-247-839-00	CARBON	2.2K	5%	1/6W	
R214	1-247-863-00	CARBON	22K	5%	1/6W	
R215	1-247-857-00	CARBON	12K	5%	1/6W	
R216	1-247-858-00	CARBON	13K	5%	1/6W	
R217	1-247-855-00	CARBON	10K	5%	1/6W	
R218	1-247-841-00	CARBON	2.7K	5%	1/6W	
R219	1-247-863-00	CARBON	22K	5%	1/6W	
R220	1-247-855-00	CARBON	10K	5%	1/6W	
R221	1-247-855-00	CARBON	10K	5%	1/6W	
R222	1-247-855-00	CARBON	10K	5%	1/6W	
R223	1-247-831-00	CARBON	1K	5%	1/6W	
R224	1-247-831-00	CARBON	1K	5%	1/6W	
R225	1-247-839-00	CARBON	2.2K	5%	1/6W	
R227	1-247-803-00	CARBON	68	5%	1/6W	
R236	1-247-871-00	CARBON	47K	5%	1/6W	
R240	1-247-804-00	CARBON	75	5%	1/6W	
R258	1-247-844-00	CARBON	3.6K	5%	1/6W	
R259	1-247-863-00	CARBON	22K	5%	1/6W	
R264	1-247-863-00	CARBON	22K	5%	1/6W	
R265	1-247-879-00	CARBON	100K	5%	1/6W	
R266	1-247-818-00	CARBON	300	5%	1/6W	
R267	1-247-838-00	CARBON	2K	5%	1/6W	
R270	1-247-839-00	CARBON	2.2K	5%	1/6W	
R271 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R272	1-247-803-00	CARBON	68	5%	1/6W	
R273	1-247-875-00	CARBON	68K	5%	1/6W	
R274	1-247-831-00	CARBON	1K	5%	1/6W	
R276	1-247-871-00	CARBON	47K	5%	1/6W	
R278	1-247-855-00	CARBON	10K	5%	1/6W	
R279	1-247-804-00	CARBON	75	5%	1/6W	
R280	1-247-867-00	CARBON	33K	5%	1/6W	
R281	1-247-807-00	CARBON	100	5%	1/6W	
R282	1-247-847-00	CARBON	4.7K	5%	1/6W	
R304	1-247-831-00	CARBON	1K	5%	1/6W	
R311	1-247-843-00	CARBON	3.3K	5%	1/6W	
R312	1-247-846-00	CARBON	4.3K	5%	1/6W	
R315	1-247-855-00	CARBON	10K	5%	1/6W	
R316	1-247-900-00	CARBON	750K	5%	1/6W	
R317	1-247-855-00	CARBON	10K	5%	1/6W	
R320	1-247-867-00	CARBON	33K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-228-749-00	RES, ADJ, CARBON 22K	
RV002	1-228-746-00	RES, ADJ, CARBON 2.2K	
RV003	1-228-744-00	RES, ADJ, CARBON 470	
RV004	1-228-995-00	RES, ADJ, METAL GLAZE 22K	
RV005	1-228-748-00	RES, ADJ, CARBON 10K	

Ref.No.	Part No.	Description	Remark
RV006	1-228-995-00	RES, ADJ, METAL GLAZE 22K	
RV007	1-228-989-00	RES, ADJ, METAL GLAZE 470	
RV008	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K	
RV009	1-228-750-00	RES, ADJ, CARBON 47K	
RV010	1-228-750-00	RES, ADJ, CARBON 47K	
RV011	1-228-750-00	RES, ADJ, CARBON 47K	
RV012	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	
RV013	1-228-989-00	RES, ADJ, METAL GLAZE 470	

TRANSFORMER

T001 1-426-093-00 COIL, REC C BPT

CRYSTAL

X001 1-527-345-00 CRYSTAL, OSC 4.43MHZ

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●:A-6713-175-A AM-3 BOARD, COMPLETE
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●:3-681-180-00 CASE (MAIN), SHIELD, AM
●:3-681-181-00 LID, UPPER, SHIELD CASE, AM
●:3-681-182-00 LID, BOTTOM, SHIELD CASE, AM

CAPACITOR

C501	1-123-356-00	ELECT	10MF	20%	16V
C503	1-123-356-00	ELECT	10MF	20%	16V
C504	1-123-356-00	ELECT	10MF	20%	16V
C505	1-123-330-00	ELECT	22MF	20%	16V
C506	1-123-333-00	ELECT	100MF	20%	16V
C507	1-123-333-00	ELECT	100MF	20%	16V
C508	1-123-328-00	ELECT	4.7MF	20%	25V
C509	1-123-328-00	ELECT	4.7MF	20%	25V
C510	1-130-497-00	MYLAR	0.15MF	5%	50V
C511	1-130-486-51	MYLAR	0.018MF	5%	50V
C512	1-123-333-00	ELECT	100MF	20%	16V
C513	1-123-379-00	ELECT	0.47MF	20%	50V
C514	1-123-330-00	ELECT	22MF	20%	16V
C515	1-102-111-00	CERAMIC	270PF	10%	50V
C516	1-123-354-00	ELECT	3.3MF	20%	50V
C517	1-130-507-51	MYLAR	0.0018MF	10%	50V
C518	1-123-305-00	ELECT	33MF	20%	10V
C519	1-130-516-51	MYLAR	0.01MF	10%	50V
C520	1-123-354-00	ELECT	3.3MF	20%	50V
C521	1-123-328-00	ELECT	4.7MF	20%	25V
C522	1-123-333-00	ELECT	100MF	20%	16V
C524	1-127-468-00	ELECT(SOLID)	0.22MF	5%	16V
C525	1-130-502-00	MYLAR	680P	10%	50V
C526	1-123-332-00	ELECT	47MF	20%	16V
C527	1-130-479-00	MYLAR	0.0047MF	5%	50V
C528	1-130-477-00	MYLAR	0.0033MF	5%	50V
C529	1-129-709-00	FILM	0.0039MF	10%	630V
C530	1-102-108-00	CERAMIC	150PF	10%	50V
C531	1-123-333-00	ELECT	100MF	20%	16V
C532	1-123-356-00	ELECT	10MF	20%	16V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
C533	1-130-518-51	MYLAR	0.015MF	10%	50V	
C534	1-123-332-00	ELECT	47MF	20%	16V	
C535	1-102-111-00	CERAMIC	270PF	10%	50V	
C536	1-123-351-00	ELECT	0.47MF	20%	50V	

CONNECTOR

CN501 ♣:	1-560-894-00	PIN, CONNECTOR 6P
CN502 ♣:	1-560-895-00	PIN, CONNECTOR 7P
CN504 ♣:	1-564-030-00	PIN, CONNECTOR 5P
CN505 ♣:	1-560-890-00	PIN, CONNECTOR 2P

TRIMMER

CT501	1-141-215-00	CAP, TRIMMER

DIODE

D501	8-719-911-19	DIODE 1SS119
D503	8-719-911-06	DIODE 1SS106
D506	8-719-911-19	DIODE 1SS119
D507	=>8-719-200-02	DIODE 10E-2
D508	8-719-812-31	DIODE TLR123

IC

IC501	8-759-800-46	IC LA7046
IC502	8-750-000-74	IC CX20061

COIL

L501	1-407-963-00	MICRO INDUCTOR 15MMH
L502	1-408-221-00	MICRO INDUCTOR 22MMH
L503	1-407-710-00	MICRO INDUCTOR 270UH
L504	1-408-221-00	MICRO INDUCTOR 22MMH

TRANSISTOR

Q501	8-729-988-12	TRANSISTOR 2SA881-R
Q502	=>8-729-245-83	TRANSISTOR 2SC2458
Q503	=>8-729-178-55	TRANSISTOR 2SC2785-E
Q504	8-729-967-32	TRANSISTOR 2SC2673-R
Q505	8-729-194-57	TRANSISTOR 2SC945-P
Q506	8-729-194-57	TRANSISTOR 2SC945-P
Q507	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q508	=>8-729-245-83	TRANSISTOR 2SC2458
Q509	=>8-729-245-83	TRANSISTOR 2SC2458
Q510	=>8-729-178-55	TRANSISTOR 2SC2785-E
Q511	=>8-729-245-83	TRANSISTOR 2SC2458
Q512	=>8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

Ref.No.	Part No.	Description				Remark
R501	1-247-879-00	CARBON	100K	5%	1/6W	
R502	1-247-864-00	CARBON	24K	5%	1/6W	
R503	1-247-875-00	CARBON	68K	5%	1/6W	
R504	1-247-875-00	CARBON	68K	5%	1/6W	
R505	1-247-875-00	CARBON	68K	5%	1/6W	
R506 ⚠	1-247-660-00	CARBON	82	5%	1/4W	F
R507	1-247-847-00	CARBON	4.7K	5%	1/6W	
R508	1-247-867-00	CARBON	33K	5%	1/6W	
R509	1-247-847-00	CARBON	4.7K	5%	1/6W	
R510	1-247-855-00	CARBON	10K	5%	1/6W	
R511	1-247-839-00	CARBON	2.2K	5%	1/6W	
R512	1-247-791-00	CARBON	22	5%	1/6W	
R513	1-247-855-00	CARBON	10K	5%	1/6W	
R515	1-247-849-00	CARBON	5.6K	5%	1/6W	
R516	1-247-819-00	CARBON	330	5%	1/6W	
R517	1-210-825-00	SOLID	3.3M	5%	1/4W	
R518	1-247-851-00	CARBON	6.8K	5%	1/6W	
R519	1-247-859-00	CARBON	15K	5%	1/6W	
R520	1-247-819-00	CARBON	330	5%	1/6W	
R521	1-247-891-00	CARBON	330K	5%	1/6W	
R522	1-247-883-00	CARBON	150K	5%	1/6W	
R524	1-247-783-00	CARBON	10	5%	1/6W	
R525	1-247-843-00	CARBON	3.3K	5%	1/6W	
R526	1-247-863-00	CARBON	22K	5%	1/6W	
R527	1-247-879-00	CARBON	100K	5%	1/6W	
R528	1-247-853-00	CARBON	8.2K	5%	1/6W	
R529	1-247-855-00	CARBON	10K	5%	1/6W	
R530	1-247-849-00	CARBON	5.6K	5%	1/6W	
R531	1-247-829-00	CARBON	820	5%	1/6W	
R532	1-247-862-00	CARBON	20K	5%	1/6W	
R533 ⚠	1-246-980-00	CARBON	3.3	5%	1/8W	F
R534	1-247-839-00	CARBON	2.2K	5%	1/6W	
R535	1-247-839-00	CARBON	2.2K	5%	1/6W	
R536	1-247-849-00	CARBON	5.6K	5%	1/6W	
R537	1-247-855-00	CARBON	10K	5%	1/6W	
R538	1-247-863-00	CARBON	22K	5%	1/6W	
R539	1-247-831-00	CARBON	1K	5%	1/6W	
R540	1-247-838-00	CARBON	2K	5%	1/6W	
R541	1-247-877-00	CARBON	82K	5%	1/6W	
R542	1-247-865-00	CARBON	27K	5%	1/6W	
R543	1-247-871-00	CARBON	47K	5%	1/6W	
R544	1-247-875-00	CARBON	68K	5%	1/6W	
R545	1-247-871-00	CARBON	47K	5%	1/6W	
R546	1-247-841-00	CARBON	2.7K	5%	1/6W	
R547	1-247-863-00	CARBON	22K	5%	1/6W	
R548	1-247-843-00	CARBON	3.3K	5%	1/6W	
R549	1-247-863-00	CARBON	22K	5%	1/6W	
R550	1-247-875-00	CARBON	68K	5%	1/6W	
R551	1-247-855-00	CARBON	10K	5%	1/6W	
R552	1-247-783-00	CARBON	10	5%	1/6W	

VARIABLE RESISTOR

RV501	1-228-748-00	RES, ADJ, CARBON 10K
RV502	1-228-744-00	RES, ADJ, CARBON 470
RV503	1-228-751-00	RES, ADJ, CARBON 100K

TRANSFORMER

T501	1-433-237-00	TRANSFORMER, OSCILLATOR

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SS-16

Ref.No.	Part No.	Description	Remark
	♠:A-6715-187-A	SS-16 BOARD, COMPLETE **********************	
	♠:3-681-170-00	HEAT SINK, S	
	7-621-770-87	SCREW +B 2.6X5	

CAPACITOR

Ref.No.	Part No.	Description			Remark
C301	1-123-330-00	ELECT	22MF	20%	16V
C302	1-130-516-51	MYLAR	0.01MF	10%	50V
C303	1-130-516-51	MYLAR	0.01MF	10%	50V
C304	1-123-354-00	ELECT	3.3MF	20%	50V
C305	1-161-021-00	CERAMIC	0.047MF	10%	25V
C306	1-123-354-00	ELECT	3.3MF	20%	50V
C307	1-161-021-00	CERAMIC	0.047MF	10%	25V
C308	1-123-354-00	ELECT	3.3MF	20%	50V
C309	1-161-021-00	CERAMIC	0.047MF	10%	25V
C310	1-130-516-51	MYLAR	0.01MF	10%	50V
C311	1-123-296-00	ELECT	220MF	20%	6.3V
C312	1-123-328-00	ELECT	4.7MF	20%	25V
C313	1-161-013-00	CERAMIC	0.01MF	10%	25V
C314	1-123-306-00	ELECT	47MF	20%	10V
C315	1-108-605-00	MYLAR	0.12MF	5%	50V
C316	1-127-468-00	ELECT(SOLID)	0.22MF	5%	16V
C317	1-123-333-00	ELECT	100MF	20%	16V
C318	1-130-479-00	MYLAR	0.0047MF	5%	50V
C319	1-102-106-00	CERAMIC	100PF	10%	50V
C320	1-123-381-00	ELECT	2.2MF	20%	50V
C321	1-123-296-00	ELECT	220MF	20%	6.3V
C322	1-161-021-00	CERAMIC	0.047MF	10%	25V
C323	1-131-357-00	TANTALUM	4.7MF	20%	25V
C324	1-123-381-00	ELECT	2.2MF	20%	50V
C325	1-131-357-00	TANTALUM	4.7MF	20%	25V
C326	1-123-381-00	ELECT	2.2MF	20%	50V
C327	1-161-016-00	CERAMIC	0.018MF	10%	25V
C328	1-161-013-00	CERAMIC	0.01MF	10%	25V
C329	1-123-356-00	ELECT	10MF	20%	16V
C330	1-161-016-00	CERAMIC	0.018MF	10%	25V
C331	1-161-016-00	CERAMIC	0.018MF	10%	25V
C332	1-123-317-00	ELECT	22MF	20%	16V
C333	1-124-429-00	ELECT	0.68MF	20%	50V
C334	1-161-021-00	CERAMIC	0.047MF	10%	25V
C335	1-161-017-00	CERAMIC	0.022MF	10%	25V
C336	1-161-002-00	CERAMIC	0.0012MF	10%	25V
C337	1-161-016-00	CERAMIC	0.018MF	10%	25V
C338	1-161-013-00	CERAMIC	0.01MF	10%	25V
C339	1-161-016-00	CERAMIC	0.018MF	10%	25V
C340	1-161-013-00	CERAMIC	0.01MF	10%	25V
C341	1-123-354-00	ELECT	3.3MF	20%	50V
C342	1-161-019-00	CERAMIC	0.033MF	10%	25V
C343	1-123-330-00	ELECT	22MF	20%	16V
C344	1-161-019-00	CERAMIC	0.033MF	10%	25V
C345	1-161-013-00	CERAMIC	0.01MF	10%	25V
C346	1-161-021-00	CERAMIC	0.047MF	10%	25V
C347	1-123-380-00	ELECT	1MF	20%	50V
C348	1-127-472-00	ELECT(SOLID)	1MF	5%	16V
C350	1-123-333-00	ELECT	100MF	20%	16V
C351	1-123-306-00	ELECT	47MF	20%	10V
C352	1-161-021-00	CERAMIC	0.047MF	10%	25V
C355	1-123-328-00	ELECT	4.7MF	20%	25V
C356	1-123-380-00	ELECT	1MF	20%	50V
C357	1-123-333-00	ELECT	100MF	20%	16V
C358	1-161-021-00	CERAMIC	0.047MF	10%	25V
C360	1-123-333-00	ELECT	100MF	20%	16V
C361	1-123-333-00	ELECT	100MF	20%	16V
C362	1-161-021-00	CERAMIC	0.047MF	10%	25V
C363	1-123-332-00	ELECT	47MF	20%	16V
C365	1-123-354-00	TANTALUM	1.5MF	10%	25V
C601	1-161-021-00	CERAMIC	0.047MF	10%	25V
C602	1-161-013-00	CERAMIC	0.01MF	10%	25V
C603	1-129-794-00	FILM	0.0033MF	5%	100V
C604	1-161-013-00	CERAMIC	0.01MF	10%	25V
C605	1-161-013-00	CERAMIC	0.01MF	10%	25V
C606	1-123-380-00	ELECT	1MF	20%	50V
C607	1-123-380-00	ELECT	1MF	20%	50V
C608	1-161-494-00	CERAMIC	0.022MF	30%	25V
C609	1-161-013-00	CERAMIC	0.01MF	10%	25V
C610	1-161-002-00	CERAMIC	0.0012MF	10%	25V
C611	1-161-002-00	CERAMIC	0.0012MF	10%	25V
C612	1-102-517-00	CERAMIC	30PF	5%	50V
C613	1-102-517-00	CERAMIC	30PF	5%	50V
C614	1-123-331-00	ELECT	33MF	20%	25V
C615	1-123-331-00	ELECT	33MF	20%	25V
C617	1-123-380-00	ELECT	1MF	20%	50V
C618	1-123-306-00	ELECT	47MF	20%	10V
C801	1-161-017-00	CERAMIC	0.022MF	10%	25V
C851	1-123-305-00	ELECT	33MF	20%	10V
C852	1-102-125-00	CERAMIC	0.0047MF	10%	50V
C853	1-102-074-00	CERAMIC	0.001MF	10%	50V

FILTER

Ref.No.	Part No.	Description
CF601	1-527-822-00	OSCILLATOR, CERAMIC

CONNECTOR

Ref.No.	Part No.	Description
CN301	♠:1-560-892-00	PIN, CONNECTOR 4P
CN302	♠:1-560-466-00	PIN, CONNECTOR 3P
CN303	♠:1-560-892-00	PIN, CONNECTOR 4P
CN304	♠:1-560-892-00	PIN, CONNECTOR 4P
CN305	♠:1-560-890-00	PIN, CONNECTOR 2P
CN306	♠:1-560-895-00	PIN, CONNECTOR 7P
CN307	♠:1-560-890-00	PIN, CONNECTOR 2P
CN308	♠:1-560-892-00	PIN, CONNECTOR 4P
CN309	♠:1-560-895-00	PIN, CONNECTOR 7P
CN310	♠:1-560-891-00	PIN, CONNECTOR 3P
CN311	♠:1-560-891-00	PIN, CONNECTOR 3P
CN312	♠:1-560-895-00	PIN, CONNECTOR 7P
CN602	♠:1-560-899-00	PIN, CONNECTOR 11P
CN603	♠:1-560-890-00	PIN, CONNECTOR 2P
CN604	♠:1-560-891-00	PIN, CONNECTOR 3P
CN605	♠:1-560-890-00	PIN, CONNECTOR 2P

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description	Remark
CN606	♠:1-560-892-00	PIN, CONNECTOR 4P	
CN607	♠:1-560-890-00	PIN, CONNECTOR 2P	
CN608	♠:1-560-892-00	PIN, CONNECTOR 4P	
CN609	♠:1-560-893-00	PIN, CONNECTOR 5P	
CN610	♠:1-560-891-00	PIN, CONNECTOR 3P	
CN611	♠:1-560-891-00	PIN, CONNECTOR 3P	
CN613	♠:1-560-894-00	PIN, CONNECTOR 6P	
CN614	♠:1-560-896-00	PIN, CONNECTOR 8P	
CN615	♠:1-560-895-00	PIN, CONNECTOR 7P	

DIODE

Ref.No.	Part No.	Description	Remark
D301	8-719-100-57	DIODE RD10EB2	
D302	8-719-000-06	DIODE MC921	
D304	8-719-911-19	DIODE 1SS119	
D306	8-719-000-06	DIODE MC921	
D308	8-719-911-19	DIODE 1SS119	
D309	8-719-911-19	DIODE 1SS119	
D311	8-719-911-19	DIODE 1SS119	
D313	8-719-911-19	DIODE 1SS119	
D314	8-719-911-19	DIODE 1SS119	
D315	8-719-911-19	DIODE 1SS119	
D316	8-719-911-19	DIODE 1SS119	
D317	8-719-911-19	DIODE 1SS119	
D325	8-719-000-04	DIODE MC911	
D326	8-719-162-07	DIODE RD6.2EB	
D327	8-719-200-02	DIODE 10E-2	
D328	8-719-000-06	DIODE MC921	
D335	8-719-911-19	DIODE 1SS119	
D339	8-719-911-19	DIODE 1SS119	
D340	8-719-911-19	DIODE 1SS119	
D341	8-719-812-31	DIODE TLR123	
D607	8-719-911-19	DIODE 1SS119	
D608	8-719-000-12	DIODE MC931	
D610	8-719-911-19	DIODE 1SS119	
D612	8-719-911-19	DIODE 1SS119	
D613	8-719-911-19	DIODE 1SS119	
D614	8-719-911-19	DIODE 1SS119	
D616	8-719-911-19	DIODE 1SS119	
D617	8-719-911-19	DIODE 1SS119	
D851	8-719-911-19	DIODE 1SS119	
D852	8-719-911-19	DIODE 1SS119	

IC

Ref.No.	Part No.	Description	Remark
IC301	8-751-941-00	IC CX-194B-0	
IC302	8-759-135-80	IC UPC358C	
IC303	8-759-145-58	IC UPC4558C	
IC304	8-759-132-40	IC UPC324C	
IC305	8-759-240-53	IC TC4053BP	
IC306	8-759-132-40	IC UPC324C	
IC307	8-759-240-53	IC TC4053BP	
IC308	8-759-135-80	IC UPC358C	
IC601	8-759-908-37	IC MB88421-113M	

COIL

Ref.No.	Part No.	Description	Remark
L601	1-408-418-00	MICRO INDUCTOR 56UH	

IC LINK

Ref.No.	Part No.	Description	Remark
PS301	⚠.1-532-637-11	LINK, IC [illegible]	
PS302	⚠.1-532-679-11	LINK, IC [illegible]	

TRANSISTOR

Ref.No.	Part No.	Description	Remark
Q301	=>8-729-245-83	TRANSISTOR 2SC2458	
Q302	=>8-729-245-83	TRANSISTOR 2SC2458	
Q303	=>8-729-245-83	TRANSISTOR 2SC2458	
Q304	=>8-729-245-83	TRANSISTOR 2SC2458	
Q305	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q306	=>8-729-245-83	TRANSISTOR 2SC2458	
Q307	=>8-729-245-83	TRANSISTOR 2SC2458	
Q309	=>8-729-245-83	TRANSISTOR 2SC2458	
Q310	=>8-729-245-83	TRANSISTOR 2SC2458	
Q311	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q312	=>8-729-177-43	TRANSISTOR 2SD774	
Q313	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q314	⚠.8-729-805-13	TRANSISTOR 2SC1475-13	
Q315	=>8-729-245-83	TRANSISTOR 2SC2458	
Q316	=>8-729-245-83	TRANSISTOR 2SC2458	
Q317	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q318	=>8-729-245-83	TRANSISTOR 2SC2458	
Q319	=>8-729-245-83	TRANSISTOR 2SC2458	
Q320	8-729-316-16	TRANSISTOR 2SC1061	
Q322	=>8-729-245-83	TRANSISTOR 2SC2458	
Q324	=>8-729-245-83	TRANSISTOR 2SC2458	
Q325	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q326	=>8-729-245-83	TRANSISTOR 2SC2458	
Q327	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q330	=>8-729-245-83	TRANSISTOR 2SC2458	
Q331	=>8-729-245-83	TRANSISTOR 2SC2458	
Q332	=>8-729-245-83	TRANSISTOR 2SC2458	
Q333	=>8-729-245-83	TRANSISTOR 2SC2458	
Q334	8-729-316-16	TRANSISTOR 2SC1061	
Q335	=>8-729-177-32	TRANSISTOR 2SD773	
Q336	=>8-729-245-83	TRANSISTOR 2SC2458	
Q337	=>8-729-245-83	TRANSISTOR 2SC2458	
Q338	=>8-729-245-83	TRANSISTOR 2SC2458	
Q339	=>8-729-245-83	TRANSISTOR 2SC2458	
Q340	8-729-374-02	TRANSISTOR 2SB740	
Q341	8-729-374-02	TRANSISTOR 2SB740	
Q342	=>8-729-177-43	TRANSISTOR 2SD774	
Q343	=>8-729-177-43	TRANSISTOR 2SD774	
Q344	=>8-729-245-83	TRANSISTOR 2SC2458	
Q345	=>8-729-177-43	TRANSISTOR 2SD774	
Q346	=>8-729-245-83	TRANSISTOR 2SC2458	
Q347	=>8-729-245-83	TRANSISTOR 2SC2458	
Q348	=>8-729-245-83	TRANSISTOR 2SC2458	
Q349	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q352	=>8-729-245-83	TRANSISTOR 2SC2458	
Q354	=>8-729-245-83	TRANSISTOR 2SC2458	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No.	Part No.	Description				Remark
Q355	=>8-729-245-83	TRANSISTOR 2SC2458				
Q356	=>8-729-245-83	TRANSISTOR 2SC2458				
Q357	=>8-729-245-83	TRANSISTOR 2SC2458				
Q358	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q359	=>8-729-245-83	TRANSISTOR 2SC2458				
Q360	=>8-729-245-83	TRANSISTOR 2SC2458				
Q362	=>8-729-245-83	TRANSISTOR 2SC2458				
Q363	=>8-729-245-83	TRANSISTOR 2SC2458				
Q364	=>8-729-245-83	TRANSISTOR 2SC2458				
Q365	=>8-729-245-83	TRANSISTOR 2SC2458				
Q366	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q367	=>8-729-245-83	TRANSISTOR 2SC2458				
Q368	=>8-729-245-83	TRANSISTOR 2SC2458				
Q370	=>8-729-245-83	TRANSISTOR 2SC2458				
Q371	=>8-729-245-83	TRANSISTOR 2SC2458				
Q372	=>8-729-245-83	TRANSISTOR 2SC2458				
Q373	=>8-729-245-83	TRANSISTOR 2SC2458				
Q604	=>8-729-245-83	TRANSISTOR 2SC2458				
Q605	=>8-729-245-83	TRANSISTOR 2SC2458				
Q606	=>8-729-245-83	TRANSISTOR 2SC2458				
Q607	=>8-729-245-83	TRANSISTOR 2SC2458				
Q608	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q609	=>8-729-245-83	TRANSISTOR 2SC2458				
Q610	=>8-729-245-83	TRANSISTOR 2SC2458				
Q611	=>8-729-245-83	TRANSISTOR 2SC2458				
Q612	=>8-729-245-83	TRANSISTOR 2SC2458				
Q613	=>8-729-245-83	TRANSISTOR 2SC2458				
Q614	=>8-729-245-83	TRANSISTOR 2SC2458				
Q615	=>8-729-177-43	TRANSISTOR 2SD774				
Q616	8-729-116-42	TRANSISTOR 2SD1164				
Q617	=>8-729-245-83	TRANSISTOR 2SC2458				
Q618	=>8-729-245-83	TRANSISTOR 2SC2458				
Q619	=>8-729-177-43	TRANSISTOR 2SD774				
Q620	8-729-116-42	TRANSISTOR 2SD1164				
Q621	=>8-729-245-83	TRANSISTOR 2SC2458				
Q622	=>8-729-245-83	TRANSISTOR 2SC2458				
Q623	=>8-729-245-83	TRANSISTOR 2SC2458				
Q624	=>8-729-245-83	TRANSISTOR 2SC2458				
Q625	=>8-729-245-83	TRANSISTOR 2SC2458				
Q626	8-729-987-42	TRANSISTOR 2SA874				
Q627	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q628	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q629	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q630	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q631	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q632	=>8-729-204-83	TRANSISTOR 2SA1048-GR				
Q633	=>8-729-245-83	TRANSISTOR 2SC2458				
Q634	=>8-729-245-83	TRANSISTOR 2SC2458				
Q636	=>8-729-245-83	TRANSISTOR 2SC2458				
Q851	=>8-729-245-83	TRANSISTOR 2SC2458				
Q852	=>8-729-245-83	TRANSISTOR 2SC2458				
		RESISTOR				
R301 ⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W	F
R302	1-247-821-00	CARBON	390	5%	1/6W	
R303	1-206-482-00	METAL OXIDE	62	5%	2W	F

Ref.No.	Part No.	Description				Remark
R304	1-247-863-00	CARBON	22K	5%	1/6W	
R305	1-247-863-00	CARBON	22K	5%	1/6W	
R306	1-247-855-00	CARBON	10K	5%	1/6W	
R307	1-247-871-00	CARBON	47K	5%	1/6W	
R308	1-247-866-00	CARBON	30K	5%	1/6W	
R309	1-247-855-00	CARBON	10K	5%	1/6W	
R310	1-247-859-00	CARBON	15K	5%	1/6W	
R312	1-247-831-00	CARBON	1K	5%	1/6W	
R313	1-247-879-00	CARBON	100K	5%	1/6W	
R314	1-247-871-00	CARBON	47K	5%	1/6W	
R315	1-247-831-00	CARBON	1K	5%	1/6W	
R316	1-247-859-00	CARBON	15K	5%	1/6W	
R317	1-247-871-00	CARBON	47K	5%	1/6W	
R318	1-247-831-00	CARBON	1K	5%	1/6W	
R319	1-247-859-00	CARBON	15K	5%	1/6W	
R320	1-247-871-00	CARBON	47K	5%	1/6W	
R321 ⚠	1-212-850-00	FUSIBLE	5.1	5%	1/4W	F
R322	1-247-865-00	CARBON	27K	5%	1/6W	
R323	1-247-855-00	CARBON	10K	5%	1/6W	
R324	1-247-855-00	CARBON	10K	5%	1/6W	
R325	1-247-855-00	CARBON	10K	5%	1/6W	
R326	1-247-829-00	CARBON	820	5%	1/6W	
R327	1-247-839-00	CARBON	2.2K	5%	1/6W	
R328	1-247-835-00	CARBON	1.5K	5%	1/6W	
R329	1-247-863-00	CARBON	22K	5%	1/6W	
R331	1-247-849-00	CARBON	5.6K	5%	1/6W	
R332	1-247-819-00	CARBON	330	5%	1/6W	
R333	1-247-891-00	CARBON	330K	5%	1/6W	
R334	1-247-859-00	CARBON	15K	5%	1/6W	
R335	1-247-849-00	CARBON	5.6K	5%	1/6W	
R336	1-247-891-00	CARBON	330K	5%	1/6W	
R338	1-247-855-00	CARBON	10K	5%	1/6W	
R339	1-247-831-00	CARBON	1K	5%	1/6W	
R340	1-247-903-00	CARBON	1M	5%	1/6W	
R341	1-247-855-00	CARBON	10K	5%	1/6W	
R342	1-247-831-00	CARBON	1K	5%	1/6W	
R343	1-247-903-00	CARBON	1M	5%	1/6W	
R344	1-247-871-00	CARBON	47K	5%	1/6W	
R345	1-247-887-00	CARBON	220K	5%	1/6W	
R346	1-247-887-00	CARBON	220K	5%	1/6W	
R347	1-247-865-00	CARBON	27K	5%	1/6W	
R348	1-247-865-00	CARBON	27K	5%	1/6W	
R349	1-247-848-00	CARBON	5.1K	5%	1/6W	
R350	1-247-867-00	CARBON	33K	5%	1/6W	
R351	1-247-867-00	CARBON	33K	5%	1/6W	
R352	1-247-855-00	CARBON	10K	5%	1/6W	
R353	1-247-856-00	CARBON	11K	5%	1/6W	
R359	1-247-871-00	CARBON	47K	5%	1/6W	
R360	1-247-871-00	CARBON	47K	5%	1/6W	
R361	1-247-859-00	CARBON	15K	5%	1/6W	
R362	1-247-872-00	CARBON	51K	5%	1/6W	
R363	1-247-847-00	CARBON	4.7K	5%	1/6W	
R364	1-247-900-00	CARBON	750K	5%	1/6W	

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When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
R365	1-247-847-00	CARBON	4.7K	5%	1/6W	
R367	1-247-871-00	CARBON	47K	5%	1/6W	
R368	1-247-833-00	CARBON	1.2K	5%	1/6W	
R369	1-247-838-00	CARBON	2K	5%	1/6W	
R370	1-247-847-00	CARBON	4.7K	5%	1/6W	
R371 ⚠	1-212-360-00	METAL OXIDE	1	5%	1W	F
R372 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R373	1-247-883-00	CARBON	150K	5%	1/6W	
R374	1-247-883-00	CARBON	150K	5%	1/6W	
R375	1-247-847-00	CARBON	4.7K	5%	1/6W	
R376	1-247-857-00	CARBON	12K	5%	1/6W	
R377	1-247-867-00	CARBON	33K	5%	1/6W	
R378	1-247-855-00	CARBON	10K	5%	1/6W	
R379	1-247-887-00	CARBON	220K	5%	1/6W	
R380	1-247-879-00	CARBON	100K	5%	1/6W	
R381	1-247-879-00	CARBON	100K	5%	1/6W	
R382	1-247-867-00	CARBON	33K	5%	1/6W	
R383	1-247-879-00	CARBON	100K	5%	1/6W	
R384	1-247-879-00	CARBON	100K	5%	1/6W	
R385	1-247-883-00	CARBON	150K	5%	1/6W	
R386	1-247-883-00	CARBON	150K	5%	1/6W	
R387	1-247-871-00	CARBON	47K	5%	1/6W	
R388	1-247-867-00	CARBON	33K	5%	1/6W	
R389	1-247-867-00	CARBON	33K	5%	1/6W	
R390	1-247-868-00	CARBON	36K	5%	1/6W	
R391	1-247-866-00	CARBON	30K	5%	1/6W	
R392	1-247-832-00	CARBON	1.1K	5%	1/6W	
R393	1-247-857-00	CARBON	12K	5%	1/6W	
R394	1-247-897-00	CARBON	560K	5%	1/6W	
R395	1-247-847-00	CARBON	4.7K	5%	1/6W	
R396	1-247-867-00	CARBON	33K	5%	1/6W	
R398	1-247-871-00	CARBON	47K	5%	1/6W	
R399	1-247-847-00	CARBON	4.7K	5%	1/6W	
R400	1-247-823-00	CARBON	470	5%	1/6W	
R401 ⚠	1-212-360-00	METAL OXIDE	1	5%	1W	F
R402 ⚠	1-246-981-00	CARBON	4.7	5%	1/8W	F
R403	1-247-831-00	CARBON	1K	5%	1/6W	
R404	1-247-871-00	CARBON	47K	5%	1/6W	
R405	1-247-855-00	CARBON	10K	5%	1/6W	
R406	1-247-871-00	CARBON	47K	5%	1/6W	
R407	1-247-855-00	CARBON	10K	5%	1/6W	
R408	1-247-879-00	CARBON	100K	5%	1/6W	
R410	1-247-831-00	CARBON	1K	5%	1/6W	
R413	1-247-859-00	CARBON	15K	5%	1/6W	
R414	1-247-850-00	CARBON	6.2K	5%	1/6W	
R415	1-247-863-00	CARBON	22K	5%	1/6W	
R416	1-247-871-00	CARBON	47K	5%	1/6W	
R417	1-247-855-00	CARBON	10K	5%	1/6W	
R419	1-247-871-00	CARBON	47K	5%	1/6W	
R420 ⚠	1-212-366-00	METAL OXIDE	3.3	5%	1W	F
R421	1-247-871-00	CARBON	47K	5%	1/6W	
R422	1-247-871-00	CARBON	47K	5%	1/6W	
R423	1-247-855-00	CARBON	10K	5%	1/6W	
R424	1-247-871-00	CARBON	47K	5%	1/6W	
R425	1-247-855-00	CARBON	10K	5%	1/6W	
R426	1-247-863-00	CARBON	22K	5%	1/6W	
R427	1-247-863-00	CARBON	22K	5%	1/6W	
R428	1-244-865-00	CARBON	470	5%	1/2W	
R429	1-247-849-00	CARBON	5.6K	5%	1/6W	
R430	1-247-831-00	CARBON	1K	5%	1/6W	
R431 ⚠	1-212-360-00	METAL OXIDE	1	5%	1W	F
R432	1-247-849-00	CARBON	5.6K	5%	1/6W	
R433	1-247-831-00	CARBON	1K	5%	1/6W	
R434	1-244-865-00	CARBON	470	5%	1/2W	
R435	1-247-863-00	CARBON	22K	5%	1/6W	
R436	1-247-863-00	CARBON	22K	5%	1/6W	
R437	1-247-871-00	CARBON	47K	5%	1/6W	
R438	1-247-855-00	CARBON	10K	5%	1/6W	
R439	1-247-903-00	CARBON	1M	5%	1/6W	
R440	1-247-855-00	CARBON	10K	5%	1/6W	
R441	1-247-903-00	CARBON	1M	5%	1/6W	
R442	1-247-871-00	CARBON	47K	5%	1/6W	
R443	1-247-855-00	CARBON	10K	5%	1/6W	
R444	1-247-871-00	CARBON	47K	5%	1/6W	
R448	1-247-873-00	CARBON	56K	5%	1/6W	
R449	1-247-897-00	CARBON	560K	5%	1/6W	
R451	1-247-871-00	CARBON	47K	5%	1/6W	
R454	1-247-857-00	CARBON	12K	5%	1/6W	
R455	1-247-845-00	CARBON	3.9K	5%	1/6W	
R456	1-247-871-00	CARBON	47K	5%	1/6W	
R457 ⚠	1-246-981-00	CARBON	4.7	5%	1/8W	F
R458	1-247-825-00	CARBON	560	5%	1/6W	
R459	1-247-837-00	CARBON	1.8K	5%	1/6W	
R460	1-247-843-00	CARBON	3.3K	5%	1/6W	
R461	1-247-871-00	CARBON	47K	5%	1/6W	
R462	1-247-855-00	CARBON	10K	5%	1/6W	
R466	1-247-871-00	CARBON	47K	5%	1/6W	
R467	1-247-871-00	CARBON	47K	5%	1/6W	
R468	1-247-871-00	CARBON	47K	5%	1/6W	
R469	1-247-839-00	CARBON	2.2K	5%	1/6W	
R470	1-247-839-00	CARBON	2.2K	5%	1/6W	
R473	1-247-855-00	CARBON	10K	5%	1/6W	
R474 ⚠	1-212-857-00	FUSIBLE	10	5%	1/4W	F
R475	1-247-819-00	CARBON	330	5%	1/6W	
R476	1-247-871-00	CARBON	47K	5%	1/6W	
R477	1-247-847-00	CARBON	4.7K	5%	1/6W	
R478	1-246-469-00	CARBON	680	5%	1/4W	
R479	1-247-847-00	CARBON	4.7K	5%	1/6W	
R480	1-247-795-00	CARBON	33	5%	1/6W	
R481	1-247-808-00	CARBON	110	5%	1/6W	
R482	1-247-871-00	CARBON	47K	5%	1/6W	
R483	1-247-855-00	CARBON	10K	5%	1/6W	
R484	1-247-855-00	CARBON	10K	5%	1/6W	
R485	1-247-821-00	CARBON	390	5%	1/6W	
R492	1-247-853-00	CARBON	8.2K	5%	1/6W	
R493	1-247-871-00	CARBON	47K	5%	1/6W	

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Ref.No.	Part No.	Description				Remark
R494	1-247-875-00	CARBON	68K	5%	1/6W	
R495	1-247-855-00	CARBON	10K	5%	1/6W	
R496	1-247-873-00	CARBON	56K	5%	1/6W	
R497	1-247-869-00	CARBON	39K	5%	1/6W	
R498	1-247-808-00	CARBON	110	5%	1/6W	
R499	1-247-831-00	CARBON	1K	5%	1/6W	
R500	1-247-871-00	CARBON	47K	5%	1/6W	
R501	1-247-855-00	CARBON	10K	5%	1/6W	
R502	1-247-855-00	CARBON	10K	5%	1/6W	
R503	1-247-831-00	CARBON	1K	5%	1/6W	
R504	1-247-871-00	CARBON	47K	5%	1/6W	
R505	1-247-855-00	CARBON	10K	5%	1/6W	
R506	1-247-863-00	CARBON	22K	5%	1/6W	
R507	1-247-871-00	CARBON	47K	5%	1/6W	
R508	1-247-871-00	CARBON	47K	5%	1/6W	
R509	1-247-871-00	CARBON	47K	5%	1/6W	
R511	1-247-863-00	CARBON	22K	5%	1/6W	
R512	1-246-467-00	CARBON	560	5%	1/4W	
R513	1-246-470-00	CARBON	750	5%	1/4W	
R514	1-247-871-00	CARBON	47K	5%	1/6W	
R516	1-247-845-00	CARBON	3.9K	5%	1/6W	
R518	1-247-863-00	CARBON	22K	5%	1/6W	
R519	1-247-855-00	CARBON	10K	5%	1/6W	
R520	1-247-871-00	CARBON	47K	5%	1/6W	
R521	1-247-879-00	CARBON	100K	5%	1/6W	
R522	1-247-857-00	CARBON	12K	5%	1/6W	
R523	1-247-855-00	CARBON	10K	5%	1/6W	
R524	1-247-842-00	CARBON	3K	5%	1/6W	
R525	1-247-855-00	CARBON	10K	5%	1/6W	
R527	1-247-863-00	CARBON	22K	5%	1/6W	
R528	1-247-871-00	CARBON	47K	5%	1/6W	
R555	1-247-880-00	CARBON	110K	5%	1/6W	
R557	1-247-871-00	CARBON	47K	5%	1/6W	
R559	1-247-865-00	CARBON	27K	5%	1/6W	
R610	1-247-817-00	CARBON	270	5%	1/6W	
R611	1-247-831-00	CARBON	1K	5%	1/6W	
R612	1-247-871-00	CARBON	47K	5%	1/6W	
R613	1-247-886-00	CARBON	200K	5%	1/6W	
R614	1-247-841-00	CARBON	2.7K	5%	1/6W	
R615	1-247-869-00	CARBON	39K	5%	1/6W	
R616	1-247-841-00	CARBON	2.7K	5%	1/6W	
R617	1-247-867-00	CARBON	33K	5%	1/6W	
R618	1-247-863-00	CARBON	22K	5%	1/6W	
R619	1-247-849-00	CARBON	5.6K	5%	1/6W	
R620	1-247-879-00	CARBON	100K	5%	1/6W	
R621	1-247-815-00	CARBON	220	5%	1/6W	
R622	1-247-875-00	CARBON	68K	5%	1/6W	
R623	1-247-831-00	CARBON	1K	5%	1/6W	
R624	1-247-801-00	CARBON	56	5%	1/6W	
R625	1-247-852-00	CARBON	7.5K	5%	1/6W	
R627	1-247-847-00	CARBON	4.7K	5%	1/6W	

Ref.No.	Part No.	Description				Remark
R628	1-247-871-00	CARBON	47K	5%	1/6W	
R629	1-247-849-00	CARBON	5.6K	5%	1/6W	
R630	1-247-871-00	CARBON	47K	5%	1/6W	
R631	1-247-895-00	CARBON	470K	5%	1/6W	
R632	1-247-875-00	CARBON	68K	5%	1/6W	
R633	1-247-831-00	CARBON	1K	5%	1/6W	
R634	1-247-879-00	CARBON	100K	5%	1/6W	
R635	1-247-871-00	CARBON	47K	5%	1/6W	
R636	1-247-871-00	CARBON	47K	5%	1/6W	
R637	1-247-827-00	CARBON	680	5%	1/6W	
R638	1-247-831-00	CARBON	1K	5%	1/6W	
R639	1-247-831-00	CARBON	1K	5%	1/6W	
R640	1-247-831-00	CARBON	1K	5%	1/6W	
R641	1-247-831-00	CARBON	1K	5%	1/6W	
R642	1-247-871-00	CARBON	47K	5%	1/6W	
R643	1-247-871-00	CARBON	47K	5%	1/6W	
R644	1-247-855-00	CARBON	10K	5%	1/6W	
R645	1-247-871-00	CARBON	47K	5%	1/6W	
R647	1-247-871-00	CARBON	47K	5%	1/6W	
R648	1-247-855-00	CARBON	10K	5%	1/6W	
R649	1-247-855-00	CARBON	10K	5%	1/6W	
R650	1-247-871-00	CARBON	47K	5%	1/6W	
R652	1-247-871-00	CARBON	47K	5%	1/6W	
R653	1-247-855-00	CARBON	10K	5%	1/6W	
R654	1-247-855-00	CARBON	10K	5%	1/6W	
R655	1-247-871-00	CARBON	47K	5%	1/6W	
R656	1-247-863-00	CARBON	22K	5%	1/6W	
R657	1-247-855-00	CARBON	10K	5%	1/6W	
R658	1-247-871-00	CARBON	47K	5%	1/6W	
R659	1-247-865-00	CARBON	27K	5%	1/6W	
R660	1-247-863-00	CARBON	22K	5%	1/6W	
R661	1-247-809-00	CARBON	120	5%	1/6W	
R662	1-247-829-00	CARBON	820	5%	1/6W	
R663	1-247-843-00	CARBON	3.3K	5%	1/6W	
R664	1-247-849-00	CARBON	5.6K	5%	1/6W	
R665	1-247-873-00	CARBON	56K	5%	1/6W	
R666	1-247-807-00	CARBON	100	5%	1/6W	
R667	1-247-855-00	CARBON	10K	5%	1/6W	
R672	1-247-831-00	CARBON	1K	5%	1/6W	
R673	1-247-831-00	CARBON	1K	5%	1/6W	
R674	1-247-831-00	CARBON	1K	5%	1/6W	
R675	1-247-831-00	CARBON	1K	5%	1/6W	
R676	1-247-831-00	CARBON	1K	5%	1/6W	
R677	1-247-831-00	CARBON	1K	5%	1/6W	
R677	1-247-831-00	CARBON	1K	5%	1/6W	
R678	1-247-855-00	CARBON	10K	5%	1/6W	
R679	1-247-871-00	CARBON	47K	5%	1/6W	
R681	1-247-831-00	CARBON	1K	5%	1/6W	
R682	1-247-831-00	CARBON	1K	5%	1/6W	
R683	1-247-871-00	CARBON	47K	5%	1/6W	
R690	1-247-855-00	CARBON	10K	5%	1/6W	
R691	1-247-855-00	CARBON	10K	5%	1/6W	
R692	1-247-855-00	CARBON	10K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
R693	1-247-855-00	CARBON	10K	5%	1/6W	
R694	1-247-855-00	CARBON	10K	5%	1/6W	
R695	1-247-855-00	CARBON	10K	5%	1/6W	
R701	1-247-846-00	CARBON	4.3K	5%	1/6W	
R702	1-247-855-00	CARBON	10K	5%	1/6W	
R704	1-247-839-00	CARBON	2.2K	5%	1/6W	
R705	1-247-839-00	CARBON	2.2K	5%	1/6W	
R706	1-247-839-00	CARBON	2.2K	5%	1/6W	
R707	1-247-839-00	CARBON	2.2K	5%	1/6W	
R708	1-247-839-00	CARBON	2.2K	5%	1/6W	
R709	1-247-839-00	CARBON	2.2K	5%	1/6W	
R801	1-247-847-00	CARBON	4.7K	5%	1/6W	
R802	1-247-831-00	CARBON	1K	5%	1/6W	
R803	1-247-839-00	CARBON	2.2K	5%	1/6W	
R804	1-247-871-00	CARBON	47K	5%	1/6W	
R828	1-247-871-31	CARBON	47K	5%	1/6W	
R851	1-247-855-00	CARBON	10K	5%	1/6W	
R853	1-247-863-00	CARBON	22K	5%	1/6W	
R854	1-247-855-00	CARBON	10K	5%	1/6W	
R855	1-247-871-00	CARBON	47K	5%	1/6W	
R856	1-247-855-00	CARBON	10K	5%	1/6W	
R857	1-247-871-00	CARBON	47K	5%	1/6W	
R858	1-247-863-00	CARBON	22K	5%	1/6W	
R859	1-247-863-00	CARBON	22K	5%	1/6W	
R860	1-247-865-00	CARBON	27K	5%	1/6W	
R861	1-247-859-00	CARBON	15K	5%	1/6W	

VARIABLE RESISTOR

Ref.No.	Part No.	Description	Remark
RV301	1-228-750-00	RES, ADJ, CARBON 47K	
RV302	1-228-750-00	RES, ADJ, CARBON 47K	
RV303	1-224-254-XX	RES, ADJ, METAL GLAZE 47K	
RV304	1-228-750-00	RES, ADJ, CARBON 47K	
RV307	1-228-994-00	RES, ADJ, METAL GLAZE 10K	
RV308	1-228-994-00	RES, ADJ, METAL GLAZE 10K	
RV309	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	
RV310	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K	

THERMISTOR

Ref.No.	Part No.	Description	Remark
TH302	1-800-202-XX	THERMISTOR S-10K	
TH303	1-800-200-00	THERMISTOR S-3K	
TH304	1-800-202-XX	THERMISTOR S-10K	
TH305	1-800-202-XX	THERMISTOR S-10K	

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♠:1-610-406-00 FU-14 BOARD
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Ref.No.	Part No.	Description	Remark
	♠:3-674-313-00	COVER, LED	
	♠:3-674-372-00	HOLDER (A), LED	

DIODE

Ref.No.	Part No.	Description	Remark
D701	8-719-812-30	DIODE TL0123	
D702	8-719-812-32	DIODE TLY123	
D703	8-719-812-32	DIODE TLY123	
D704	8-719-812-33	DIODE TLG123A	
D705	8-719-812-30	DIODE TL0123	
D706	8-719-812-33	DIODE TLG123A	

RESISTOR

Ref.No.	Part No.	Description				Remark
R701	1-247-813-00	CARBON	180	5%	1/6W	
R702	1-247-813-00	CARBON	180	5%	1/6W	
R703	1-247-811-00	CARBON	150	5%	1/6W	
R704	1-247-811-00	CARBON	150	5%	1/6W	

SWITCH

Ref.No.	Part No.	Description	Remark
S701	1-553-997-00	SWITCH, KEY BOARD	
S702	1-553-997-00	SWITCH, KEY BOARD	
S703	1-553-997-00	SWITCH, KEY BOARD	
S704	1-553-997-00	SWITCH, KEY BOARD	
S705	1-553-997-00	SWITCH, KEY BOARD	
S706	1-553-997-00	SWITCH, KEY BOARD	
S707	1-553-997-00	SWITCH, KEY BOARD	

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♠:A-6721-168-A TU-39 BOARD, COMPLETE
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Ref.No.	Part No.	Description	Remark
	1-230-134-00	PRESET UNIT (12CH)	
	♠:3-681-175-00	LID, UPPER, SHIELD CASE, TU	
	♠:3-681-176-00	LID, BOTTOM, SHIELD CASE, TU	
	♠:3-681-183-00	CASE (MAIN), SHIELD, TU	
	♠:4-336-029-00	PLATE, SHIELD	

CAPACITOR

Ref.No.	Part No.	Description				Remark
C001	1-123-356-00	ELECT	10MF	20%	16V	
C002	1-161-032-00	CERAMIC	0.01MF	20%	25V	
C003	1-161-032-00	CERAMIC	0.01MF	20%	25V	
C004	1-123-356-00	ELECT	10MF	20%	16V	
C005	1-161-075-51	CERAMIC	0.068MF	20%	50V	
C007	1-102-529-00	CERAMIC	100PF	5%	50V	
C008	1-102-527-00	CERAMIC	82PF	5%	50V	
C009	1-102-943-00	CERAMIC	6PF	0.5PF	50V	
C010	1-102-523-00	CERAMIC	56PF	5%	50V	
C011	1-102-529-00	CERAMIC	100PF	5%	50V	
C012	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C013	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C014	1-102-074-00	CERAMIC	0.001MF	10%	50V	
C015	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C016	1-101-004-00	CERAMIC	0.01MF		50V	
C017	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C018	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C019	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C020	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C021	1-123-328-00	ELECT	4.7MF	20%	25V	
C022	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C023	1-161-030-00	CERAMIC	0.0047MF	20%	25V	
C024	1-102-518-00	CERAMIC	33PF	5%	50V	
C025	1-102-529-00	CERAMIC	100PF	5%	50V	
C026	1-102-941-00	CERAMIC	4PF	0.5PF	50V	
C027	1-102-941-00	CERAMIC	4PF	0.5PF	50V	
C028	1-102-518-00	CERAMIC	33PF	5%	50V	
C029	1-102-527-00	CERAMIC	82PF	5%	50V	

When indicating parts by reference number, please include the board name.

TU-39

Ref.No.	Part No.	Description			Remark
C030	1-123-356-00	ELECT	10MF	20%	16V
C031	1-161-030-00	CERAMIC	0.0047MF	20%	25V
C032	1-161-032-00	CERAMIC	0.01MF	20%	25V
C033	1-123-380-00	ELECT	1MF	20%	50V
C034	1-123-318-00	ELECT	33MF	20%	16V
C035	1-101-004-00	CERAMIC	0.01MF		50V
C039	1-102-959-00	CERAMIC	22PF	5%	50V
C040	1-102-959-00	CERAMIC	22PF	5%	50V
C041	1-161-032-00	CERAMIC	0.01MF	20%	25V
C042	1-161-032-00	CERAMIC	0.01MF	20%	25V
C044	1-161-030-00	CERAMIC	0.0047MF	20%	25V
C045	1-102-959-00	CERAMIC	22PF	5%	50V
C046	1-101-004-00	CERAMIC	0.01MF		50V
C047	1-123-318-00	ELECT	33MF	20%	16V
C048	1-161-032-00	CERAMIC	0.01MF	20%	25V
C049	1-123-380-00	ELECT	1MF	20%	50V
C050	1-123-356-00	ELECT	10MF	20%	50V
C051	1-123-379-00	ELECT	0.47MF	20%	50V
C052	1-101-004-00	CERAMIC	0.01MF		50V
C053	1-123-356-00	ELECT	10MF	20%	50V
C054	1-131-415-00	ELECT(SOLID)	0.68MF	10%	16V
C055	1-123-356-00	ELECT	10MF	20%	16V
C056	1-123-356-00	ELECT	10MF	20%	16V
C057	1-123-356-00	ELECT	10MF	20%	16V
C058	1-123-356-00	ELECT	10MF	20%	16V
C059	1-123-356-00	ELECT	10MF	20%	16V

CERAMIC DISCRIMINATOR

CD001	1-404-380-00	DISCRIMINATOR, CERAMIC 5.5MHZ

FILTER

CF001	1-527-263-00	CERAMIC FILTER (5.5MHZ)

CONNECTOR

CN001	🌢:1-560-892-00	PIN, CONNECTOR 4P
CN002	🌢:1-560-894-00	PIN, CONNECTOR 6P
CN003	🌢:1-560-895-00	PIN, CONNECTOR 7P
CN004	🌢:1-560-892-00	PIN, CONNECTOR 4P
CN005	🌢:1-560-893-00	PIN, CONNECTOR 5P
CN006	🌢:1-560-899-00	PIN, CONNECTOR 11P

TRIMMER

CT001	1-404-134-00	TRAP, CERAMIC (5.5MHZ)

DIODE

Ref.No.	Part No.	Description	Remark
D001	8-719-911-19	DIODE 1SS119	
D002	8-719-911-19	DIODE 1SS119	
D005	8-719-911-19	DIODE 1SS119	
D006	=>8-719-101-83	DIODE RD12EL2	
D007	8-719-901-33	DIODE 1SS133	
D008	8-719-901-33	DIODE 1SS133	
D009	8-719-901-33	DIODE 1SS133	
D010	8-719-901-33	DIODE 1SS133	
D011	8-719-901-33	DIODE 1SS133	
D012	8-719-901-33	DIODE 1SS133	
D013	8-719-901-33	DIODE 1SS133	
D014	8-719-901-33	DIODE 1SS133	
D015	8-719-901-33	DIODE 1SS133	
D016	8-719-901-33	DIODE 1SS133	
D017	8-719-901-33	DIODE 1SS133	
D018	8-719-901-33	DIODE 1SS133	
D019	8-719-911-19	DIODE 1SS119	
D020	8-719-911-19	DIODE 1SS119	
D021	8-719-911-19	DIODE 1SS119	
D022	8-719-911-19	DIODE 1SS119	
D023	8-719-911-19	DIODE 1SS119	
D024	8-719-911-19	DIODE 1SS119	
D025	8-719-911-19	DIODE 1SS119	
D026	8-719-911-19	DIODE 1SS119	
D027	8-719-911-19	DIODE 1SS119	
D028	8-719-911-19	DIODE 1SS119	
D029	8-719-911-19	DIODE 1SS119	
D030	8-719-911-19	DIODE 1SS119	
D032	8-719-911-19	DIODE 1SS119	
D033	8-719-911-19	DIODE 1SS119	
D034	8-719-911-19	DIODE 1SS119	
D035	8-719-911-19	DIODE 1SS119	
D036	8-719-911-19	DIODE 1SS119	
D037	8-719-911-19	DIODE 1SS119	
D038	8-719-911-19	DIODE 1SS119	
D039	8-719-911-19	DIODE 1SS119	
D040	8-719-911-19	DIODE 1SS119	
D041	8-719-911-19	DIODE 1SS119	
D042	8-719-911-19	DIODE 1SS119	
D043	8-719-911-19	DIODE 1SS119	

IC

IC001	8-759-276-07	IC TA7607AP
IC002	8-759-193-91	IC UPC1391H
IC003	8-759-600-44	IC M54836AP
IC004	8-759-157-40	IC UPC574J

COIL

L001	1-407-681-00	MICRO INDUCTOR 1UH
L002	1-407-690-00	MICRO INDUCTOR 5.6UH
L003	1-408-406-00	MICRO INDUCTOR 5.6UH
L004	1-408-423-00	MICRO INDUCTOR 150UH
L005	1-408-409-00	MICRO INDUCTOR 10UH
L007	1-408-412-00	MICRO INDUCTOR 18UH
L008	1-408-413-00	MICRO INDUCTOR 22UH

When indicating parts by reference number, please include the board name.

TRANSISTOR

Ref.No.	Part No.	Description	Remark
Q001	8-765-300-00	TRANSISTOR 2SC2009	
Q002	8-769-200-20	TRANSISTOR 2SK107-2	
Q003	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458	
Q008	8-729-103-43	TRANSISTOR 2SB734	
Q009	=>8-729-117-54	TRANSISTOR 2SA1175	
Q010	=>8-729-117-54	TRANSISTOR 2SA1175	
Q011	=>8-729-117-54	TRANSISTOR 2SA1175	
Q013	=>8-729-245-83	TRANSISTOR 2SC2458	
Q014	8-769-200-20	TRANSISTOR 2SK107-2	
Q016	=>8-729-245-83	TRANSISTOR 2SC2458	
Q017	=>8-729-245-83	TRANSISTOR 2SC2458	
Q018	=>8-729-245-83	TRANSISTOR 2SC2458	
Q019	=>8-729-204-83	TRANSISTOR 2SA1048-GR	

RESISTOR

Ref.No.	Part No.	Description				Remark
R001	1-247-871-00	CARBON	47K	5%	1/6W	
R002	1-247-847-00	CARBON	4.7K	5%	1/6W	
R003	1-247-831-00	CARBON	1K	5%	1/6W	
R004	1-247-847-00	CARBON	4.7K	5%	1/6W	
R005	1-247-845-00	CARBON	3.9K	5%	1/6W	
R006	1-247-815-00	CARBON	220	5%	1/6W	
R007	1-247-815-00	CARBON	220	5%	1/6W	
R008	1-247-823-00	CARBON	470	5%	1/6W	
R009	1-247-837-00	CARBON	1.8K	5%	1/6W	
R010	1-247-831-00	CARBON	1K	5%	1/6W	
R011	1-247-841-00	CARBON	2.7K	5%	1/6W	
R012	1-247-835-00	CARBON	1.5K	5%	1/6W	
R013	1-247-863-00	CARBON	22K	5%	1/6W	
R014	1-247-877-00	CARBON	82K	5%	1/6W	
R015	1-247-867-00	CARBON	33K	5%	1/6W	
R016	1-247-901-00	CARBON	820K	5%	1/6W	
R017	1-247-831-00	CARBON	1K	5%	1/6W	
R018	1-247-813-00	CARBON	180	5%	1/6W	
R019	1-247-807-00	CARBON	100	5%	1/6W	
R020	1-247-823-00	CARBON	470	5%	1/6W	
R021	1-247-820-00	CARBON	360	5%	1/6W	
R028	1-247-831-00	CARBON	1K	5%	1/6W	
R029	1-247-831-00	CARBON	1K	5%	1/6W	
R030	1-247-847-00	CARBON	4.7K	5%	1/6W	
R031	1-247-817-00	CARBON	270	5%	1/6W	
R032	1-247-821-00	CARBON	390	5%	1/6W	
R035	1-247-841-00	CARBON	2.7K	5%	1/6W	
R036	1-247-865-00	CARBON	27K	5%	1/6W	
R039	1-247-879-00	CARBON	100K	5%	1/6W	
R040	1-247-855-00	CARBON	10K	5%	1/6W	
R041	1-247-855-00	CARBON	10K	5%	1/6W	
R042	1-247-855-00	CARBON	10K	5%	1/6W	
R043	1-247-855-00	CARBON	10K	5%	1/6W	
R044	1-247-855-00	CARBON	10K	5%	1/6W	
R045	1-247-855-00	CARBON	10K	5%	1/6W	
R049	1-247-855-00	CARBON	10K	5%	1/6W	
R050	1-247-895-00	CARBON	470K	5%	1/6W	
R052	1-247-897-00	CARBON	560K	5%	1/6W	
R053	1-247-883-00	CARBON	150K	5%	1/6W	
R054	1-247-883-00	CARBON	150K	5%	1/6W	
R055	1-247-867-00	CARBON	33K	5%	1/6W	
R056	1-247-871-00	CARBON	47K	5%	1/6W	
R057	1-247-871-00	CARBON	47K	5%	1/6W	
R058	1-247-895-00	CARBON	470K	5%	1/6W	
R059 ⚠	1-206-670-00	METAL OXIDE	1.8K	5%	2W	F
R060	1-247-875-00	CARBON	68K	5%	1/6W	
R061	1-247-839-00	CARBON	2.2K	5%	1/6W	
R062	1-247-831-00	CARBON	1K	5%	1/6W	
R063	1-247-881-00	CARBON	120K	5%	1/6W	
R064	1-247-863-00	CARBON	22K	5%	1/6W	
R065	1-247-863-00	CARBON	22K	5%	1/6W	
R066	1-247-863-00	CARBON	22K	5%	1/6W	
R067	1-247-863-00	CARBON	22K	5%	1/6W	
R068	1-247-863-00	CARBON	22K	5%	1/6W	
R069	1-247-863-00	CARBON	22K	5%	1/6W	
R070	1-247-863-00	CARBON	22K	5%	1/6W	
R071	1-247-855-00	CARBON	10K	5%	1/6W	
R072	1-247-863-00	CARBON	22K	5%	1/6W	
R073 ⚠	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R074	1-247-871-00	CARBON	47K	5%	1/6W	
R076	1-247-863-00	CARBON	22K	5%	1/6W	
R077	1-247-871-00	CARBON	47K	5%	1/6W	
R078	1-247-875-00	CARBON	68K	5%	1/6W	
R079	1-247-879-00	CARBON	100K	5%	1/6W	
R080	1-247-895-00	CARBON	470K	5%	1/6W	
R081	1-247-855-00	CARBON	10K	5%	1/6W	
R082	1-247-839-00	CARBON	2.2K	5%	1/6W	

VARIABLE RESISTOR

Ref.No.	Part No.	Description	Remark
RV001	1-228-747-00	RES, ADJ, CARBON 4.7K	
RV002	1-228-753-00	RES, ADJ, CARBON 470K	

SWITCH

Ref.No.	Part No.	Description	Remark
S001	1-516-226-00	SLIDE SWITCH	
S002	1-554-373-00	SWITCH, LEVER	

FILTER

Ref.No.	Part No.	Description	Remark
SF001	1-404-433-00	SAWF	

TRANSFORMER

Ref.No.	Part No.	Description	Remark
T001	1-404-068-00	COIL, VIF	
T002	1-404-068-00	COIL, VIF	
T003	1-404-207-00	COIL, VIF	
T004	1-404-203-00	COIL, VIF	
T005	1-404-203-00	COIL, VIF	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

MT-4 | SW-25 | CS-3 | CS-4 | N | LM-8 | RD-6 | RD-7 | TM-37

Ref.No.	Part No.	Description				Remark
	•:1-610-400-00	MT-4 BOARD **********				
⚠ TU001	.1-463-350-12	TUNER (BT-881) [illegible]				

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	:1-610-410-00	SW-25 BOARD ***********	

VARIABLE RESISTOR

RV611	1-230-122-00	RES, VAR, CARBON 100K

SWITCH

S611	1-554-377-00	SWITCH, SLIDE
S612	1-554-377-00	SWITCH, SLIDE

****

	•:1-609-227-00	CS-3 BOARD **********

CONNECTOR

CN301	•:1-564-029-00	PIN, CONNECTOR 4P

SWITCH

S301	1-554-241-00	SWITCH, LEVER

****

	•:1-609-228-00	CS-4 BOARD **********

SWITCH

S302	1-554-241-00	SWITCH, LEVER

****

	•:1-606-794-00	N BOARD *******

CAPACITOR

C001	1-123-617-00	ELECT	10MF	20%	16V
C002	1-123-617-00	ELECT	10MF	20%	16V
C003	1-123-617-00	ELECT	10MF	20%	16V
C004	1-161-019-00	CERAMIC	0.033MF	10%	25V
C005	1-108-567-00	MYLAR	0.0033MF	5%	50V
C006	1-123-821-00	ELECT	47MF	20%	16V

DIODE

D001	8-719-110-32	DIODE PH302B

IC

IC001	8-759-113-73	IC UPC1373H

COIL

L001	1-404-310-00	COIL

Ref.No.	Part No.	Description				Remark
	•:1-605-071-00	LM-8 BOARD **********				

CAPACITOR

C101	1-161-057-00	CERAMIC	0.033MF	10%	50V
C102	1-161-057-00	CERAMIC	0.033MF	10%	50V

COIL

L101	1-408-120-00	MICRO INDUCTOR 18UH
L102	1-408-120-00	MICRO INDUCTOR 18UH

RESISTOR

R101	1-206-479-00	METAL OXIDE	47	5%	2W	F

****

	•:1-610-401-00	RD-6 BOARD **********
	•:3-681-157-00	HOLDER, RD

DIODE

D001	=>8-719-921-03	DIODE GP-2S02B

****

	•:1-610-402-00	RD-7 BOARD **********

DIODE

D001	=>8-719-921-03	DIODE GP-2S02B

****

	•: 1-610-403-00	TM-37 BOARD ***********

CAPACITOR

C001	1-123-382-00	ELECT	3.3MF	20%	50V
C002	1-125-299-00	************	0.047F		0
C004	1-102-959-00	CERAMIC	22PF	5%	50V
C005	1-123-318-00	ELECT	33MF	20%	16V
C006	1-123-342-00	ELECT	22MF	20%	35V
C007	1-161-024-00	CERAMIC	0.082MF	10%	25V
C008	1-161-772-11	CERAMIC	0.1MF	10%	25V
C009	1-161-061-00	CERAMIC	0.068MF	10%	50V
C011	1-161-772-11	CERAMIC	0.1MF	10%	25V

CONNECTOR

CN002	•:1-560-891-00	PIN, CONNECTOR 3P
CN004	•:1-560-895-00	PIN, CONNECTOR 7P
CN007	•:1-564-027-00	PIN, CONNECTOR 2P

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description	Remark
		DIODE	
D001	8-719-911-19	DIODE 1SS119	
D002	8-719-191-07	DIODE RD9.1EB	
D005	8-719-812-31	DIODE TLR123	
D006	8-719-911-19	DIODE 1SS119	
D007	8-719-911-19	DIODE 1SS119	
D008	8-719-911-19	DIODE 1SS119	
D009	8-719-911-19	DIODE 1SS119	
		IC	
IC001	8-759-101-63	UPD7519G-033	
		TRANSISTOR	
Q005	=>8-729-245-83	TRANSISTOR 2SC2458	
Q006	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
		RESISTOR	
R001	1-247-875-00	CARBON 68K 5% 1/6W	
R004	1-247-903-00	CARBON 1M 5% 1/6W	
R006	1-247-831-00	CARBON 1K 5% 1/6W	
R007	1-247-879-00	CARBON 100K 5% 1/6W	
R008	1-247-863-00	CARBON 22K 5% 1/6W	
R009	1-247-867-00	CARBON 33K 5% 1/6W	
R010	1-247-867-00	CARBON 33K 5% 1/6W	
R011	1-247-872-00	CARBON 51K 5% 1/6W	
R012	1-247-843-00	CARBON 3.3K 5% 1/6W	
R013	1-247-879-00	CARBON 100K 5% 1/6W	
R014	1-247-879-00	CARBON 100K 5% 1/6W	
R015	1-247-879-00	CARBON 100K 5% 1/6W	
R016	1-247-879-00	CARBON 100K 5% 1/6W	
R017	1-247-868-00	CARBON 36K 5% 1/6W	
R018	1-247-886-00	CARBON 200K 5% 1/6W	
R019	1-247-874-00	CARBON 62K 5% 1/6W	
R020	1-247-869-00	CARBON 39K 5% 1/6W	
R021	1-247-879-00	CARBON 100K 5% 1/6W	
R022	1-247-855-00	CARBON 10K 5% 1/6W	
R023	1-247-855-00	CARBON 10K 5% 1/6W	
R024	1-247-855-00	CARBON 10K 5% 1/6W	
R025	1-247-855-00	CARBON 10K 5% 1/6W	
R026	1-247-855-00	CARBON 10K 5% 1/6W	
R027	1-247-855-00	CARBON 10K 5% 1/6W	
R028	1-247-855-00	CARBON 10K 5% 1/6W	
R029	1-247-855-00	CARBON 10K 5% 1/6W	
R030	1-247-855-00	CARBON 10K 5% 1/6W	
R032	1-247-855-00	CARBON 10K 5% 1/6W	
		TRIMMER	
TC001	1-141-022-11	CAP, TRIMMER, CERAMIC	
		CRYSTAL	
X001	1-527-647-00	OSCILLATOR, CRYSTAL	

Ref.No.	Part No.	Description	Remark
	♠:1-610-404-00	TM-38 BOARD ***********	
	♠:2-364-740-00	HOLDER, LED	
		DIODE	
D101	8-719-911-19	DIODE 1SS119	
D102	8-719-812-31	DIODE TLR123	
D103	8-719-812-31	DIODE TLR123	
		INDICATOR TUBE	
FL101	1-519-295-00	INDICATOR TUBE, FLUORESCENT	
		RESISTOR	
R101	1-247-819-00	CARBON 330 5% 1/6W	
		SWITCH	
S101	1-553-997-00	SWITCH, KEY BOARD	
S102	1-553-997-00	SWITCH, KEY BOARD	
S103	1-553-997-00	SWITCH, KEY BOARD	

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Ref.No.	Part No.	Description	Remark
	♠:1-610-405-00	TM-39 BOARD ***********	
		SWITCH	
S201	1-553-997-00	SWITCH, KEY BOARD	
S203	1-553-997-00	SWITCH, KEY BOARD	
S204	1-553-997-00	SWITCH, KEY BOARD	
S205	1-553-997-00	SWITCH, KEY BOARD	
S206	1-553-997-00	SWITCH, KEY BOARD	
S207	1-553-997-00	SWITCH, KEY BOARD	
S208	1-553-997-00	SWITCH, KEY BOARD	
S209	1-553-997-00	SWITCH, KEY BOARD	
S210	1-553-997-00	SWITCH, KEY BOARD	
S211	1-553-997-00	SWITCH, KEY BOARD	

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Ref.No.	Part No.	Description	Remark
	♠:1-610-407-00	CH-36 BOARD ***********	
		SWITCH	
S501	1-553-997-00	SWITCH, KEY BOARD	
S502	1-553-997-00	SWITCH, KEY BOARD	
S503	1-553-997-00	SWITCH, KEY BOARD	
S504	1-553-997-00	SWITCH, KEY BOARD	
S505	1-553-997-00	SWITCH, KEY BOARD	
S506	1-553-997-00	SWITCH, KEY BOARD	
S507	1-553-997-00	SWITCH, KEY BOARD	
S508	1-553-997-00	SWITCH, KEY BOARD	
S509	1-553-997-00	SWITCH, KEY BOARD	
S510	1-553-997-00	SWITCH, KEY BOARD	
S511	1-553-997-00	SWITCH, KEY BOARD	
S512	1-553-997-00	SWITCH, KEY BOARD	

When indicating parts by reference number, please include the board name.

SR-17

Ref.No.	Part No.	Desription		Remark
	⚠.1-413-156-11	POWER BLOCK (SR-17) *******************		
	1-533-170-00	HOLDER, FUSE		
	⚠.1-534-817-00	CORD POWER		
		CAPACITOR		
C1	1-124-036-00	ELECT	330MF	16V
C2	1-130-018-00	POLYESTER	0.001MF	50V
C3	1-130-518-00	POLYESTER	0.0022MF	50V
C4	1-130-933-00	POLY-PROPYLENE	0.01MF	100V
C5	1-130-933-00	POLY-PROPYLENE	0.01MF	100V
C6	1-123-356-00	ELECT	10MF	50V
C7	1-123-356-00	ELECT	10MF	50V
C8	1-130-491-00	POLYESTER	0.047MF	50V
C9	1-130-491-00	POLYESTER	0.047MF	50V
C10	1-123-356-00	ELECT	10MF	50V
C601	⚠.1-110-085-00	METALLIZED POLYESTER	0.22MF	AC250V
C602	⚠.1-161-742-00	CERAMIC	0.0022MF	AC400V
C603	⚠.1-161-742-00	CERAMIC	0.0022MF	AC400V
C604	⚠.1-161-742-00	CERAMIC	0.0022MF	AC400V
C605	⚠.1-161-742-00	CERAMIC	0.0022MF	AC400V
C606	⚠.1-161-743-00	CERAMIC	0.0047MF	AC400V
C607	⚠.1-161-743-00	CERAMIC	0.0047MF	AC400V
C608	1-125-352-00	ELECT	180MF	400V
C609	1-124-023-00	ELECT	4.7MF	350V
C610	1-124-162-00	ELECT	47MF	10V
C611	1-124-162-00	ELECT	47MF	10V
C621	1-108-413-00	POLYESTER	0.0022MF	200V
C622	1-108-413-00	POLYESTER	0.0022MF	200V
C623	1-161-910-00	CERAMIC	390PF	500V
C624	1-161-910-00	CERAMIC	390PF	500V
C625	1-161-915-00	CERAMIC	0.001MF	500V
C626	1-130-620-00	POLYESTER	0.01MF	50V
C627	1-130-624-00	POLYESTER	0.022MF	50V
C628	1-123-385-00	ELECT	22MF	100V
C629	1-108-377-00	POLYESTER	0.01MF	100V
C630	1-123-324-00	ELECT	1000MF	16V
C631	1-123-330-00	ELECT	22MF	25V
C632	1-123-321-00	ELECT	220MF	16V
C633	1-123-321-00	ELECT	220MF	16V
C634	1-124-036-00	ELECT	330MF	16V
C635	1-124-126-00	ELECT	47MF	25V
C636	1-124-126-00	ELECT	47MF	25V
C637	1-124-127-00	ELECT	100MF	25V
C638	1-123-357-00	ELECT	22MF	50V
C639	1-123-357-00	ELECT	22MF	50V
C651	1-124-127-00	ELECT	100MF	25V
C652	1-130-027-00	POLY-PROPYLENE	0.0056MF	50V
C653	1-130-512-00	POLYESTER	0.0047MF	50V
C654	1-130-626-00	POLYESTER	0.33MF	50V
C655	1-123-318-00	ELECT	33MF	16V

Ref.No.	Part No.	Desription	Remark
		CONNECTOR	
CN301	♠:1-560-893-00	PIN, CONNECTOR 5P	
CN302	♠:1-560-892-00	PIN, CONNECTOR 4P	
CN304	♠:1-560-895-00	PIN, CONNECTOR 7P	
CN306	♠:1-560-891-00	PIN, CONNECTOR 3P	
CN403	♠:1-560-891-00	PIN, CONNECTOR 3P	
CN405	♠:1-560-890-00	PIN, CONNECTOR 2P	
CN651	♠:1-564-109-00	PIN, CONNECTOR	
CN671	♠:1-564-163-00	PIN, CONNECTOR	
		DIODE	
D1	=>8-719-815-85	DIODE 1S1585	
D2	=>8-719-815-85	DIODE 1S1585	
D3	=>8-719-815-85	DIODE 1S1585	
D4	8-719-101-40	DIODE RD3.9EL1	
D601	8-719-300-63	DIODE LD156	
D621	8-719-908-00	DIODE ESAC33-02CS	
D622	=>8-719-900-95	DIODE V09G	
D623	=>8-719-815-85	DIODE 1S1585	
D624	8-719-100-61	DIODE RD11EB2	
D625	=>8-719-815-55	DIODE 1S1555	
D626	8-719-100-23	DIODE RD4.3EB2	
D627	8-719-100-23	DIODE RD4.3EB2	
D628	=>8-719-815-55	DIODE 1S1555	
D629	=>8-719-815-55	DIODE 1S1555	
D630	=>8-719-815-55	DIODE 1S1555	
D631	8-719-100-37	DIODE RD6.2EB1	
D632	=>8-719-815-55	DIODE 1S1555	
D633	=>8-719-815-55	DIODE 1S1555	
D634	=>8-719-815-55	DIODE 1S1555	
D635	=>8-719-815-55	DIODE 1S1555	
D636	=>8-719-815-55	DIODE 1S1555	
D637	8-719-100-36	DIODE RD5.6EB3	
D638	=>8-719-815-55	DIODE 1S1555	
D639	8-719-100-41	DIODE RD6.8EB2	
D651	=>8-719-200-02	DIODE 10E2	
D652	8-719-100-67	DIODE RD13EB1	
		FUSE	
F601	⚠.1-532-237-11	FUSE, TIME-LAG T3.15A 250V	
		FERRITE BEAD	
FB621	1-543-060-00	FERRITE BEAD	
FB622	1-543-060-00	FERRITE BEAD	
FB623	1-543-060-00	FERRITE BEAD	
FB624	1-543-060-00	FERRITE BEAD	
		IC	
IC651	8-759-937-59	IC MB3759	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Desription			Remark
		COIL			
L1	1-421-550-00	MICRO INDUCTOR 66UH			
L2	1-408-999-00	MICRO INDUCTOR 45UH			
L3	1-408-575-00	MICRO INDUCTOR 100UH			
L4	1-408-575-00	MICRO INDUCTOR 100UH			
L5	1-408-417-00	MICRO INDUCTOR 47UH			
L6	1-408-571-00	MICRO INDUCTOR 47UH			
L7	1-408-571-00	MICRO INDUCTOR 47UH			
L601	⚠.1-421-481-21	MICRO INDUCTOR			
L621	1-421-545-00	MICRO INDUCTOR			
L622	1-421-421-00	MICRO INDUCTOR 100UH			
L623	1-421-421-00	MICRO INDUCTOR 100UH			
L624	1-421-547-00	MICRO INDUCTOR 10UH			
		TRANSISTOR			
Q1	=>8-729-204-83	TRANSISTOR 2SA1048-GR			
Q2	=>8-729-177-43	TRANSISTOR 2SD774			
Q3	=>8-729-245-83	TRANSISTOR 2SC2458			
Q4	=>8-729-245-83	TRANSISTOR 2SC2458			
Q601 Q602	⚠.X-3681-138-1	TRANSISTOR			
Q603	⚠.8-729-102-03	TRANSISTOR 2SD1020			
Q604	⚠.8-729-102-03	TRANSISTOR 2SD1020			
Q621	⚠.8-729-306-72	TRANSISTOR 2SD667A			
Q622	=>8-729-245-83	TRANSISTOR 2SC2458			
Q623	=>8-729-245-83	TRANSISTOR 2SC2458			
Q624	=>8-729-204-83	TRANSISTOR 2SA1048-GR			
Q625	8-729-102-03	TRANSISTOR 2SA1020			
Q626	8-729-188-23	TRANSISTOR 2SD882			
Q627	8-729-188-23	TRANSISTOR 2SD882			
Q628	=>8-729-245-83	TRANSISTOR 2SC2458			
		RESISTOR			
R1	1-247-839-00	CARBON	2.2K	1/6W	
R2	1-247-887-00	CARBON	220K	1/6W	
R3	1-247-855-00	CARBON	10K	1/6W	
R4	1-247-807-00	CARBON	100	1/6W	
R5	1-247-872-00	CARBON	51K	1/6W	
R6	1-247-871-00	CARBON	47K	1/6W	
R7	1-247-872-00	CARBON	51K	1/6W	
R8	1-247-844-00	CARBON	3.6K	1/6W	
R9	1-247-875-00	CARBON	68K	1/6W	
R601	1-207-673-00	WIRE-WOUND	3.3	5W	F
R602	1-246-528-00	CARBON	200K	1/4W	
R603	1-246-528-00	CARBON	200K	1/4W	
R604	1-246-528-00	CARBON	200K	1/4W	
R605	1-246-528-00	CARBON	200K	1/4W	
R606	⚠.1-212-946-11	FUSIBLE	3.3	1/2W	F
R607	⚠.1-212-946-11	FUSIBLE	3.3	1/2W	F
R608	1-247-107-00	CARBON	100	1/4W	
R609	1-247-107-00	CARBON	100	1/4W	
R621	1-206-475-00	METAL-OXIDE	33	2W	F

Ref.No.	Part No.	Desription			Remark
R622	1-535-363-00	SHUNT	0.02	2W	
R623	1-247-143-00	CARBON	3.3K	1/4W	
R624	1-247-131-00	CARBON	1.0K	1/4W	
R625	⚠.1-247-923-61	CARBON	8.2	1/4W	F
R626	1-213-151-00	METAL-OXIDE	4.7K	1W	F
R627	1-247-161-00	CARBON	18K	1/4W	
R628	1-247-167-00	CARBON	33K	1/4W	
R629	1-247-079-00	CARBON	4.7	1/4W	
R630	1-247-111-00	CARBON	150	1/4W	
R631	1-247-159-00	CARBON	15K	1/4W	
R632	1-247-138-00	CARBON	4.7K	1/4W	
R633	1-247-138-00	CARBON	4.7K	1/4W	
R634	1-247-141-00	CARBON	2.7K	1/4W	
R635	1-247-143-00	CARBON	3.3K	1/4W	
R636	1-247-134-00	CARBON	1.3K	1/4W	
R637	1-247-155-00	CARBON	10K	1/4W	
R638	1-247-138-00	CARBON	4.7K	1/4W	
R639	1-247-204-00	CARBON	33	1/2W	F
R640	1-247-129-00	CARBON	820	1/4W	
R641	1-207-931-00	CEMENT	12	5W	F
R642	1-247-128-00	CARBON	750	1/4W	
R643	1-247-226-00	CARBON	270	1/2	F
R644	1-247-131-00	CARBON	1.0K	1/4	
R645	1-247-143-00	CARBON	3.3K	1/4W	
R646	1-213-144-00	METAL FILM	1.2K	1W	F
R647	1-247-183-00	CARBON	1.8	1/2W	F
R651	1-247-143-00	CARBON	3.3K	1/4W	
R652	1-247-131-00	CARBON	1.0K	1/4W	
R653	1-247-149-00	CARBON	5.6K	1/4W	
R654	1-247-139-00	CARBON	2.2K	1/4W	
R655	1-247-145-00	CARBON	3.9K	1/4W	
R656	1-247-140-00	CARBON	2.4K	1/4W	
R657	1-247-161-00	CARBON	18K	1/4W	
R658	1-247-167-00	CARBON	33K	1/4W	
R659	1-247-125-00	CARBON	560	1/4W	
		VARIABLE RESISTOR			
RV1	1-228-990-00	RES, ADJ, METAL GLAZE 1K			
RV621	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K			
RV651	1-228-141-00	RES, ADJ, METAL GLAZE 500			
		RELAY			
RY621	1-515-462-00	RELAY			
		TRANSFORMER			
T1	1-447-689-00	CONVERTER, T			
T601	⚠.1-447-677-11	CONVERTER, T			
T602	⚠.1-437-102-00	DRIVER, T			

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description	Remark

MISCELLANEOUS
****

Ref.No.	Part No.	Description	Remark
	A-6761-060-A	ACE ASSY (AUDIO, AUDIO ERASE, CTL)	
	⚠.1-463-350-12	TUNER (BT-881)	
	⚠.1-464-270-12	BOOSTER, RF MODULATOR(RFU-808)	
	1-541-163-00	MOTOR (LOADING MOTOR)	
	♠:1-556-934-00	CABLE, PIN	
	8-825-508-10	HEAD, FE (FULL ERASE)	
L901	1-464-249-21	SENSOR, S COIL	
L902	1-464-250-00	SENSOR, T COIL	
M902	8-838-048-00	MOTOR, DC (BHF-1908A)(CAPSTAN MOTOR)	
M903	A-4910-021-A	R STATOR BOARD, COMPLETE (REEL MOTOR)	
M904	A-6737-118-A	MOTOR ASSY, L (LOADING MOTOR)	
PM901	⚠1-454-348-31	SOLENOID, BRAKE PLUNGER	
PM902	⚠1-454-349-00	SOLENOID, PLUNGER (PINCH)	
S901	1-554-374-00	SWITCH, LEVER (REC PROOF)	
S902	1-554-374-00	SWITCH, LEVER (CASSETTE DOWN)	
S903	1-553-539-00	SWITCH, MICRO (LOADING END)	
S904	1-553-718-00	SWITCH, MICRO (UNLOADING END)	

****

ACCESSORIES AND PACKING MATERIALS
****

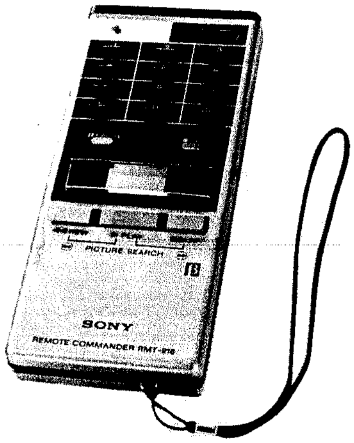
Part No.	Description	Remark
A-6765-177-A	COMMANDER ASSY RMT-216S (SILVER)	
A-6765-286-A	COMMANDER ASSY RMT-216R (RED)	
1-551-513-00	CABLE, COAXAL ASSY	
1-556-893-00	CORD ASSY, COAXIAL	
3-656-301-00	SCREWDRIVER, CONTROL	
3-671-873-00	CASE, ACCESSORY	
3-675-581-00	LID, CASE, ACCESSORY	
3-681-190-00	SHEET (LARGE), PROTECTION	
3-681-192-00	CUSHION (UPPER)	
3-681-193-00	CUSHION (LOWER)	
3-681-265-00	INDIVIDUAL CARTON (SILVER)	
3-681-265-11	INDIVIDUAL CARTON (RED)	
3-773-600-41	MANUAL, INSTRUCTION	
3-681-283-01	COVER, DUST	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

RMT-216

SERVICE MANUAL


PICTURE SEARCH
SONY
REMOTE COMMANDER RMT-216

SPECIFICATIONS

Remote control system	Infrared control
Power requirements	3V dc, 2 IEC designation R6 batteries (size AA)
Dimensions	Approx. 65 × 20 × 153 mm (w/h/d) ($2\,^{5}/_{8} \times {}^{13}/_{16} \times 6\,^{1}/_{8}$ inches) incl. projecting parts and controls
Weight	Approx. 140 g (5 oz) incl. batteries

REMOTE CONTROL UNIT

SONY®

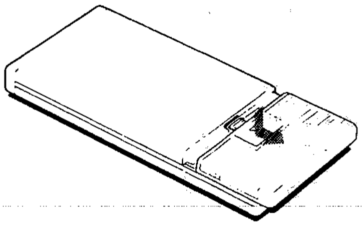
ACC

1. REMOTE CONTROL OPERATION

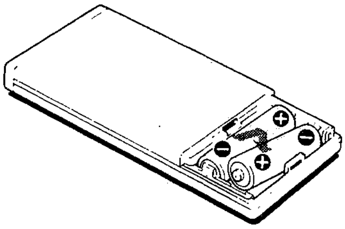
You can control almost all the functions of this video cassette recorder from your armchair using the supplied Remote Commander.

BATTERY INSERTION

1 Open the lid.



2 Insert two IEC designation R6 batteries (size AA) with correct polarity.



3 Close the lid firmly.

Notes on the Remote Commander

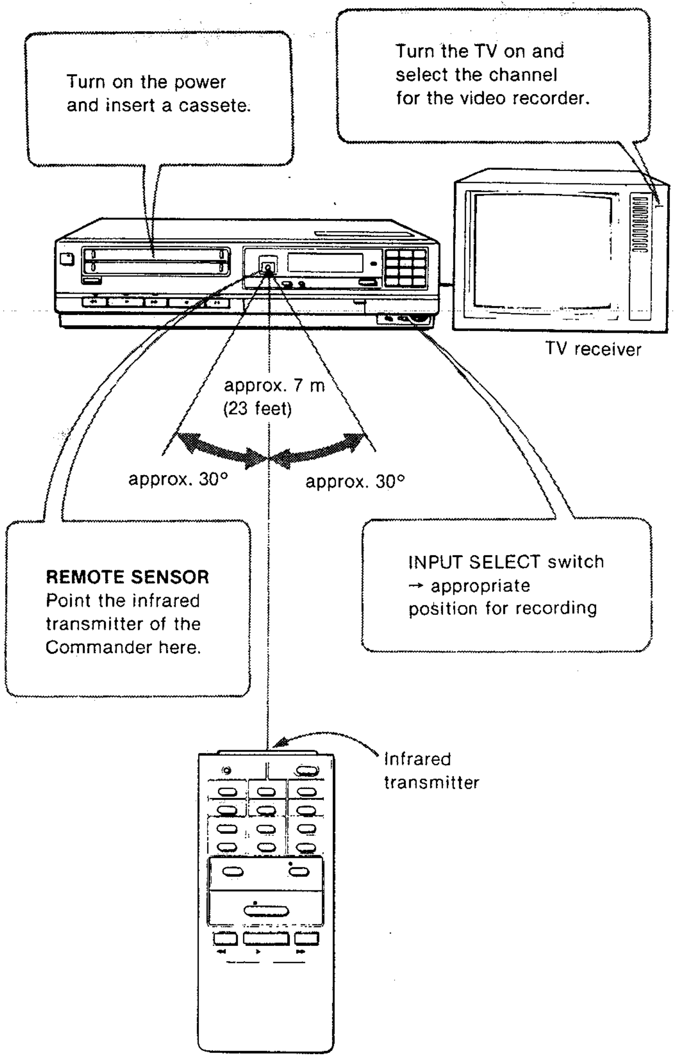
- Avoid dropping foreign objects into the cabinet, particularly when replacing batteries.
- Keep the Commander away from extremely hot or humid places.
- Avoid mechanical shock to the unit.
- This Commander may be used only with this video cassette recorder.

Battery life

In normal operation, batteries will last for about six months. If the range of the Remote Commander becomes noticeably short, replace the batteries with new ones. When the batteries are exhausted, the remote function indicator will not light when the buttons on the Commander are pressed.

If the Commander is not to be used for a long period of time, remove the batteries to avoid possible damage from battery leakage.

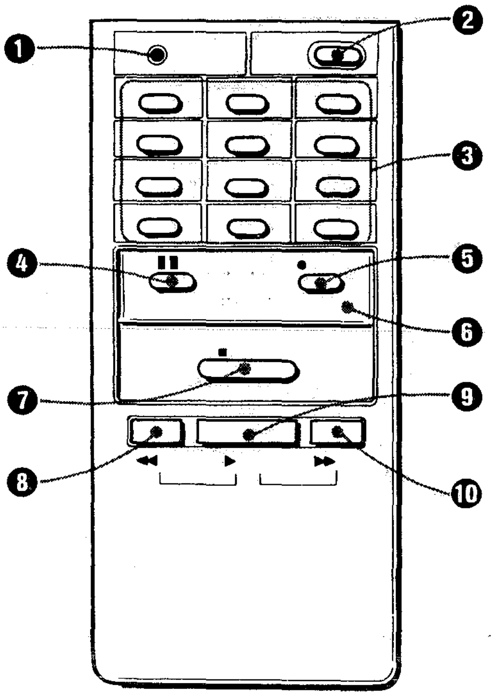
PREPARATION


Turn on the power
and insert a cassete.
Turn the TV on and
select the channel
for the video recorder.
TV receiver
approx. 7 m
(23 feet)
approx. 30°
approx. 30°
REMOTE SENSOR
Point the infrared
transmitter of the
Commander here.
INPUT SELECT switch
→ appropriate
position for recording
Infrared
transmitter

Notes

- There should be no obstacles between the Commander and the REMOTE SENSOR of the recorder.
- The shorter the distance between the Commander and the recorder, the wider the angle within which the recorder can be controlled.

FUNCTION OF THE BUTTONS



❶ Remote function indicator
Lights up when any of the buttons on the Commander are pressed.

❷ ON button
Press to turn the power on. To turn it off, press again.

❸ Programme select buttons
Press to select a programme to be viewed or to be recorded.

❹ II PAUSE button
Press to stop the tape momentarily. To resume the previous mode, press it again.

❺ ● REC button
Press to start recording.

❻ Sliding cover
During playback, slide this cover over the record button to prevent accidental recording. During recording, slide this cover down to prevent accidental interruption of recording.

❼ ■ STOP button
Press to stop the tape.

❽ ◀◀ REW button
Press to rewind the tape. Used also for reverse picture search operation during playback and for skip scan operation during rewinding.

❾ ▶ PLAY button
Press to play the tape back.

❿ ▶▶ FF button
Press to advance the tape rapidly. Used also for forward picture search operation during playback and for skip scan operation during fast forward mode.

OPERATION

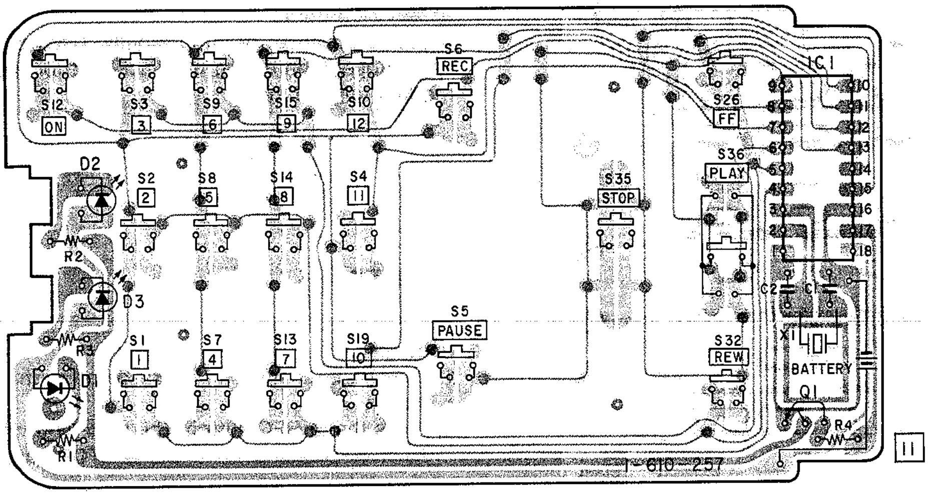
Recording
1 Select the channel to be recorded with the programme select button.
2 Press the ● REC button. The recording will begin.
To stop recording, press the ■ STOP button.

Playback
Press the ▶ PLAY button. Playback will begin.
To stop playback, press the ■ STOP button.

A B C D E F G

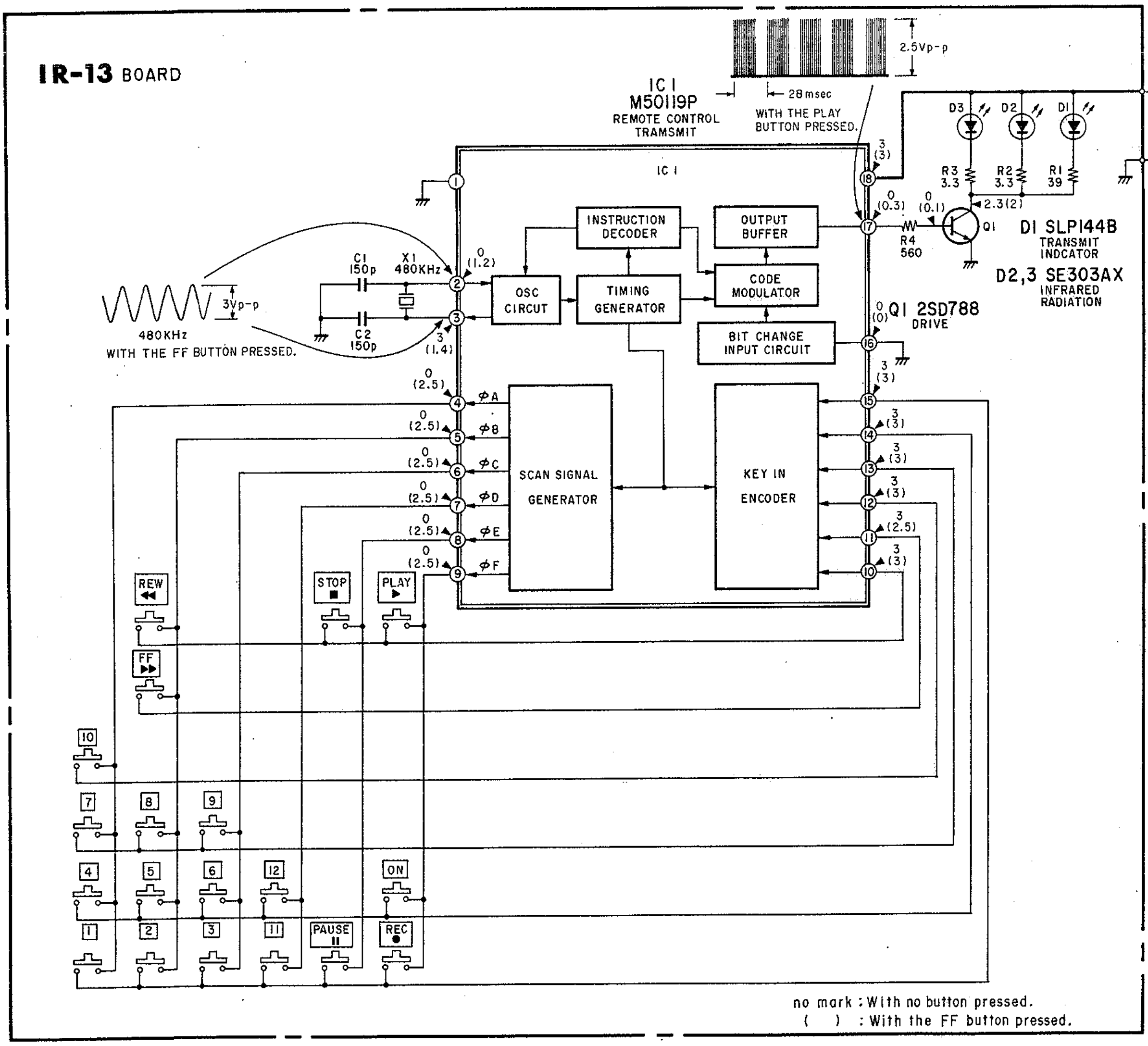
2. PRINTED WIRING BOARD

[IR-13 BOARD]



S6
REC
S12
ON
S3
3
S9
6
S15
9
S10
12
S26
FF
IC1
D2
S2
2
S8
5
S14
8
S4
11
S36
PLAY
S35
STOP
R2
D3
R3
D1
R1
S1
1
S7
4
S13
7
S19
10
S5
PAUSE
S32
REW
C2
C1
X1
BATTERY
Q1
R4
1-610-257
11

3. SCHEMATIC DIAGRAM



IR-13 BOARD
IC1
M50119P
REMOTE CONTROL TRAMSMIT
2.5Vp-p
28msec
WITH THE PLAY BUTTON PRESSED.
IC1
INSTRUCTION DECODER
OUTPUT BUFFER
OSC CIRCUT
TIMING GENERATOR
CODE MODULATOR
BIT CHANGE INPUT CIRCUIT
SCAN SIGNAL GENERATOR
KEY IN ENCODER
C1 150p
X1 480KHz
C2 150p
3Vp-p
480KHz
WITH THE FF BUTTON PRESSED.
φA
φB
φC
φD
φE
φF
D3
D2
D1
R3 3.3
R2 3.3
R1 39
R4 560
Q1
2.3(2)
BATTERY SIZE "AA"
(IEC DESIGNATION R6)
2PCS 3V
D1 SLP144B
TRANSMIT INDCATOR
D2,3 SE303AX
INFRARED RADIATION
Q1 2SD788
DRIVE
REW
FF
STOP
PLAY
10
7
8
9
4
5
6
12
ON
1
2
3
11
PAUSE
REC

no mark : With no button pressed.
( ) : With the FF button pressed.

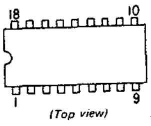
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted.
  50V or less are not indicated except for electrolytic capacitors.
- —— : B + bus.

The voltage value is measured using a digital tester (10MΩ/V).

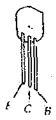
When indicating parts by reference number, please include the board name.

- ○— indicates a lead wire mounted on the component side.
- ●— indicates a lead wire mounted on the printed side.
- ▓ Conductor side (inner)
- ░ Conductor Side
- ░ B + patten

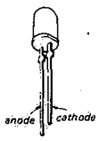
M50119P



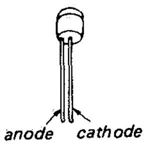
2SD788



SE303AX
SE303AY

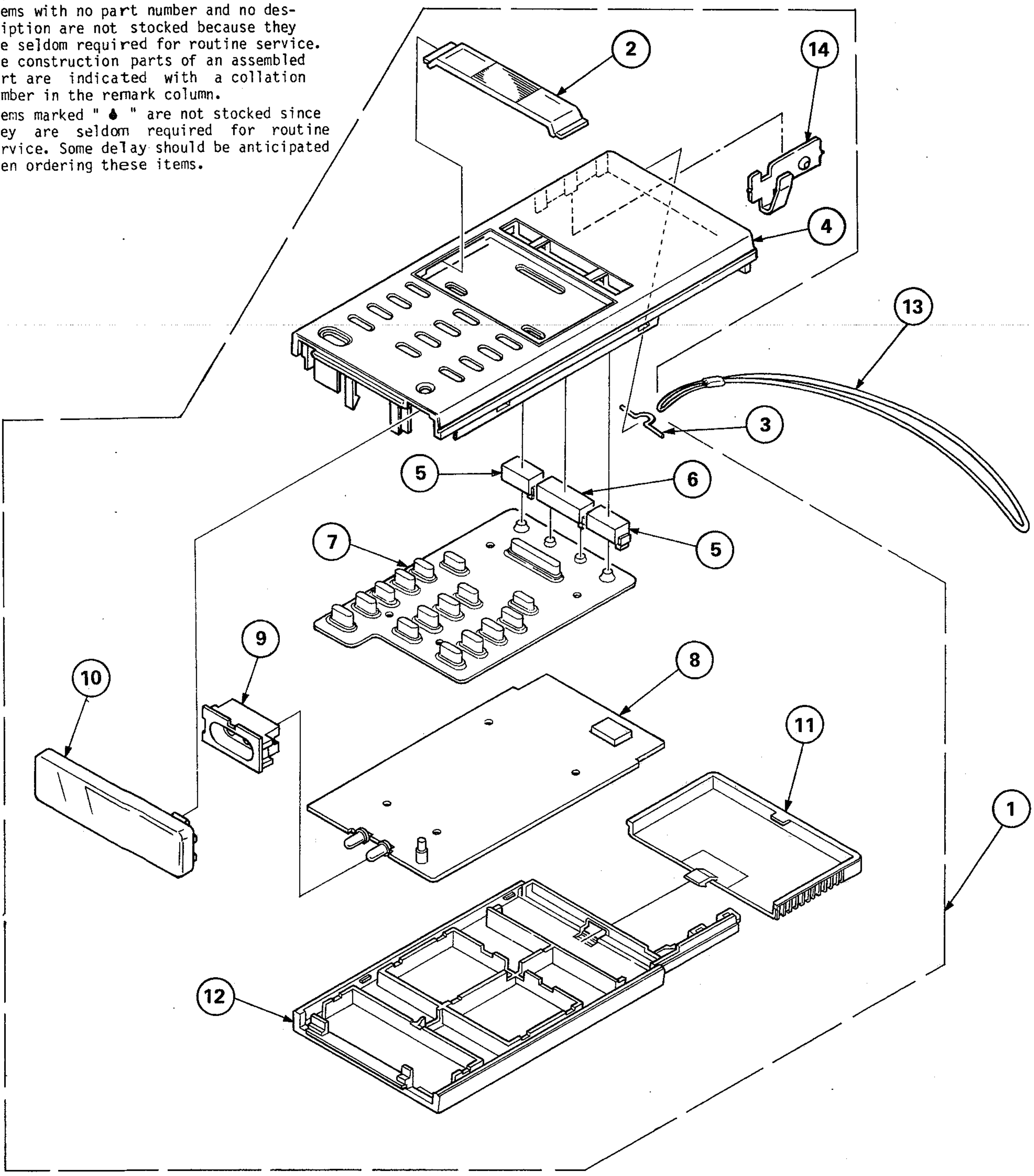


SLP144B



4. EXPLODED VIEW

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



No.	Part No.	Description	Remark
1	A-6765-177-A	COMMANDER ASSY RMT-216S (SILVER)	2,3,4,5,6,7,8,9,10,11,12,14
	A-6765-286-A	COMMANDER ASSY RMT-216R (RED)	2,3,4,5,6,7,8,9,10,11,12,14
2	2-290-603-00	CURSOR	
3	♠:2-290-630-00	STOPPER, HOLDER	
4	X-2374-604-0	CASING ASSY (SILVER)	
	X-2290-627-0	CASING ASSY (RED)	
5	2-290-633-00	PUSH BUTTON (M)	
6	2-290-632-00	PUSH BUTTON (L)	
7	2-374-636-00	RUBBER (L), CONTACT	
8	♠:1-610-257-00	IR-13 BOARD	
9	2-298-402-00	MIRROR	
10	2-290-608-00	PLATE, FROSTED	
11	2-290-606-00	COVER, BATTERY (SILVER)	
	2-290-606-11	COVER, BATTERY (SILVER)	
12	2-290-611-00	CASE, LOWER (SILVER)	
	2-290-611-11	CASE, LOWER (RED)	
13	4-352-958-00	STRAP, HAND	
14	4-350-925-00	TERMINAL (C), BATTERY	

5. ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
- MF : μF, PF : μμF

RESISTORS
- All resistors are in ohms
- F : nonflammable

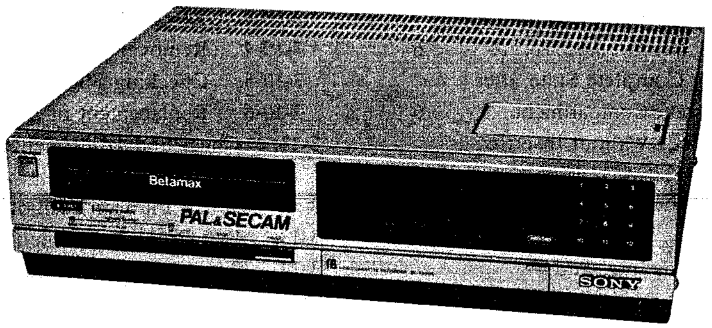
COILS
- MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remark
	♠:1-610-257-00	IR-13 BOARD ***********				
	2-290-601-00	TERMINAL (A), BATTERY				
	2-290-602-00	TERMINAL (B), BATTERY				
		CAPACITOR				
C1	1-102-108-00	CERAMIC	150PF	10%	50V	
C2	1-102-108-00	CERAMIC	150PF	10%	50V	
		DIODE				
D1	8-719-901-44	DIODE SLP144B				
D2	8-719-193-03	DIODE SE303AX				
D3	8-719-193-03	DIODE SE303AX				
		IC				
IC1	8-759-600-07	IC M50119P				
		TRANSISTOR				
Q1	8-729-378-84	TRANSISTOR 2SD788				
		RESISTOR				
R1	1-247-797-00	CARBON	39	5%	1/6W	
R2	1-247-771-00	CARBON	3.3	5%	1/6W	
R3	1-247-771-00	CARBON	3.3	5%	1/6W	
R4	1-247-825-00	CARBON	560	5%	1/6W	
		CRYSTAL				
X1	1-527-476-00	OSCILLATOR, CERAMIC				

SL-T20ME

ADJUSTMENT MANUAL


Betamax
PAL&SECAM
SONY

711B CHASSIS

Beta
β VIDEO CASSETTE RECORDER
SONY®

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SECTION 1
PREPARATION FOR MECHANICAL SECTION CHECK, ADJUSTMENT, AND REPLACEMENT

1-1. REMOVAL OF THE CASE AND FRONT PANEL

1) Remove the four screws ①.
2) Remove the upper case ② in the direction shown by the arrow Ⓐ.
3) Remove the seven screws ③ and the lower case ④ in the direction shown by the arrow Ⓑ.
4) Remove the five screws ⑤ and the front panel ⑥ in the direction shown by the arrow Ⓒ.

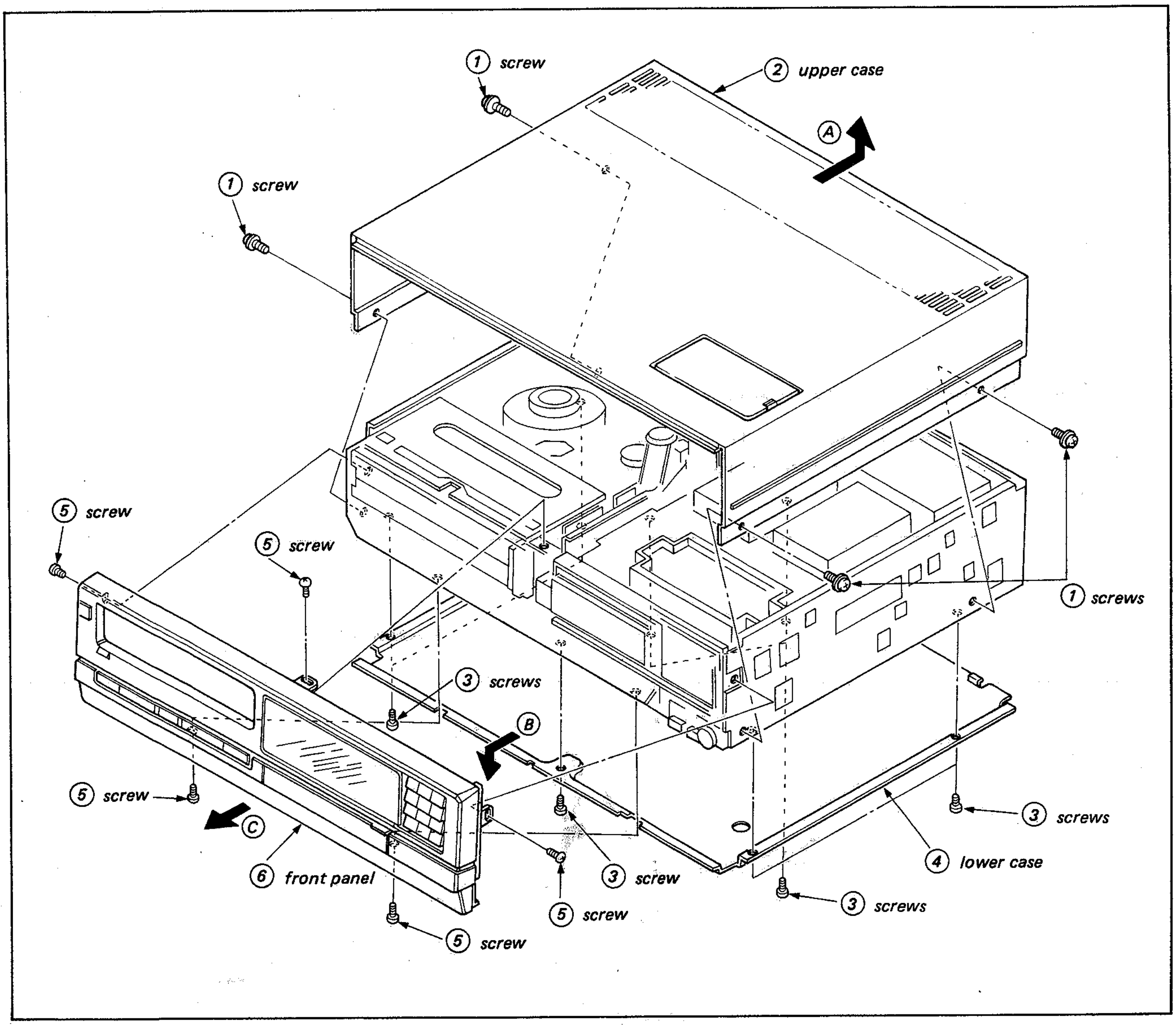

① screw
② upper case
Ⓐ
① screw
⑤ screw
⑤ screw
① screws
③ screws
Ⓑ
⑤ screw
Ⓒ
③ screws
⑥ front panel
③ screw
④ lower case
⑤ screw
③ screws
⑤ screw

Fig. 1-1. Removal of the Case and Front Panel

1-2. DISMOUNTING THE RY-1 BOARD

1) Stand the set with the right side panel on the bottom.
2) Remove the two screws ①, holding the RY-1 board.
3) Swing open the RY-1 board in the direction shown by the arrow Ⓐ and rest it on a cassette.

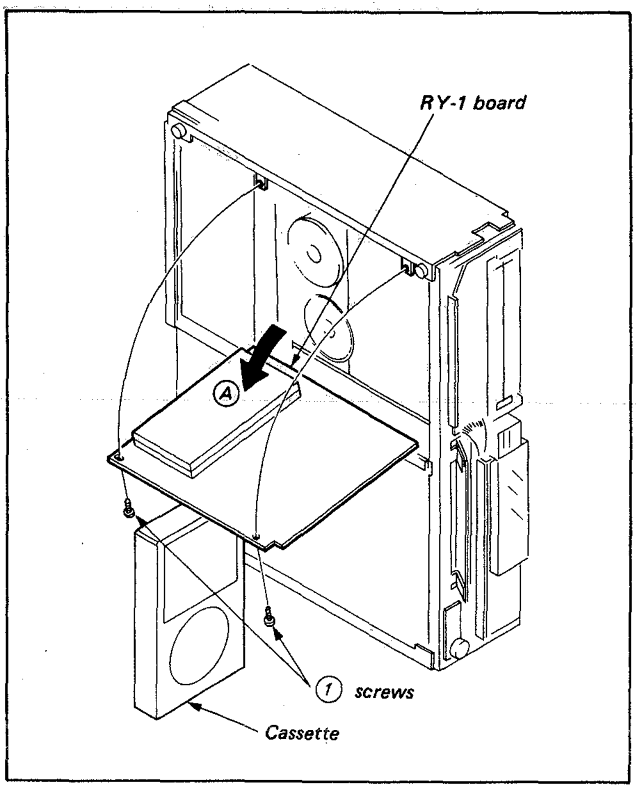

RY-1 board
Ⓐ
① screws
Cassette

Fig. 1-2. Dismounting the RY-1 Board

1-3. DISMOUNTING THE TU-39 BOARD

1) Remove the four screws ① holding the TU-39 board.
2) Remove the TU-39 board in the direction shown by the arrow Ⓐ.

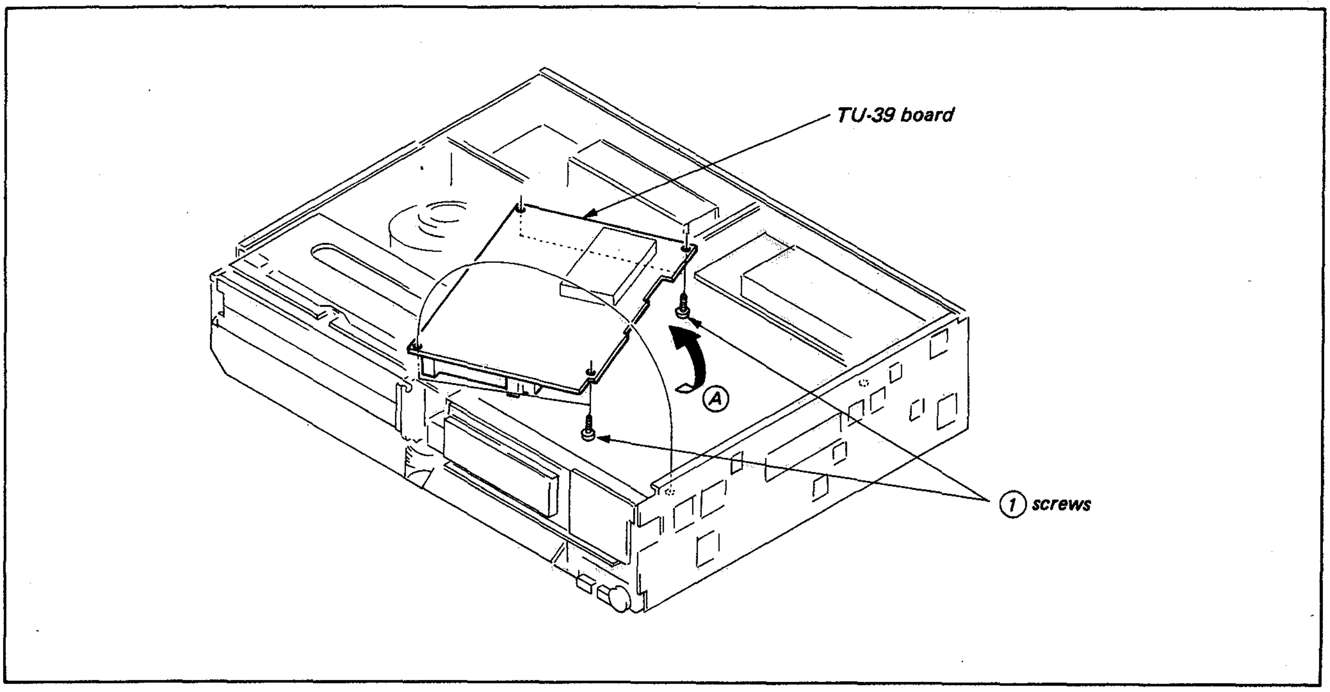

TU-39 board
Ⓐ
① screws

Fig. 1-3. Dismounting the TU-39 Board

1-4. DISMOUNTING THE YC-25 BOARD

1) Stand the set with the power source side on the bottom.
2) Remove the screw ① and the panel connector ②.
3) Remove the four screws ③, holding the YC-25 board.
4) Swing open the YC-25 board in the direction shown by the arrow Ⓐ and rest it on a cassette.

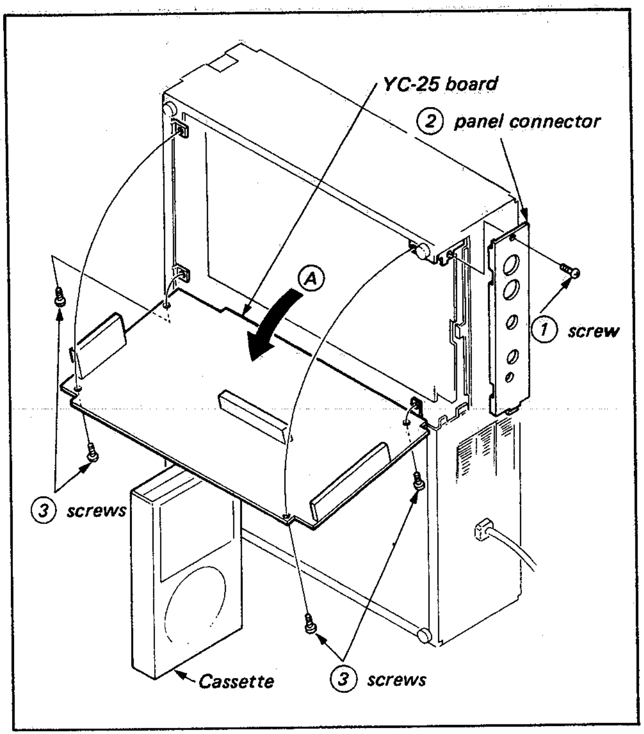

YC-25 board
② panel connector
Ⓐ
① screw
③ screws
Cassette
③ screws

Fig. 1-4. Dismounting the YC-25 Board

1-5. REMOVING OF POWER BLOCK

1) Remove the three screws ① of the rear panel.
2) Remove the screw ② of the bottom plate.
3) Remove the three screws ③ and the power cord bracket.
4) Remove the four screws ④, holding the power block.
5) Pull out the six connectors ⑤ (CN301, 302, 304, 306, 403, 405), from the power block side.
6) Remove the power block in the direction shown by the arrow Ⓐ.

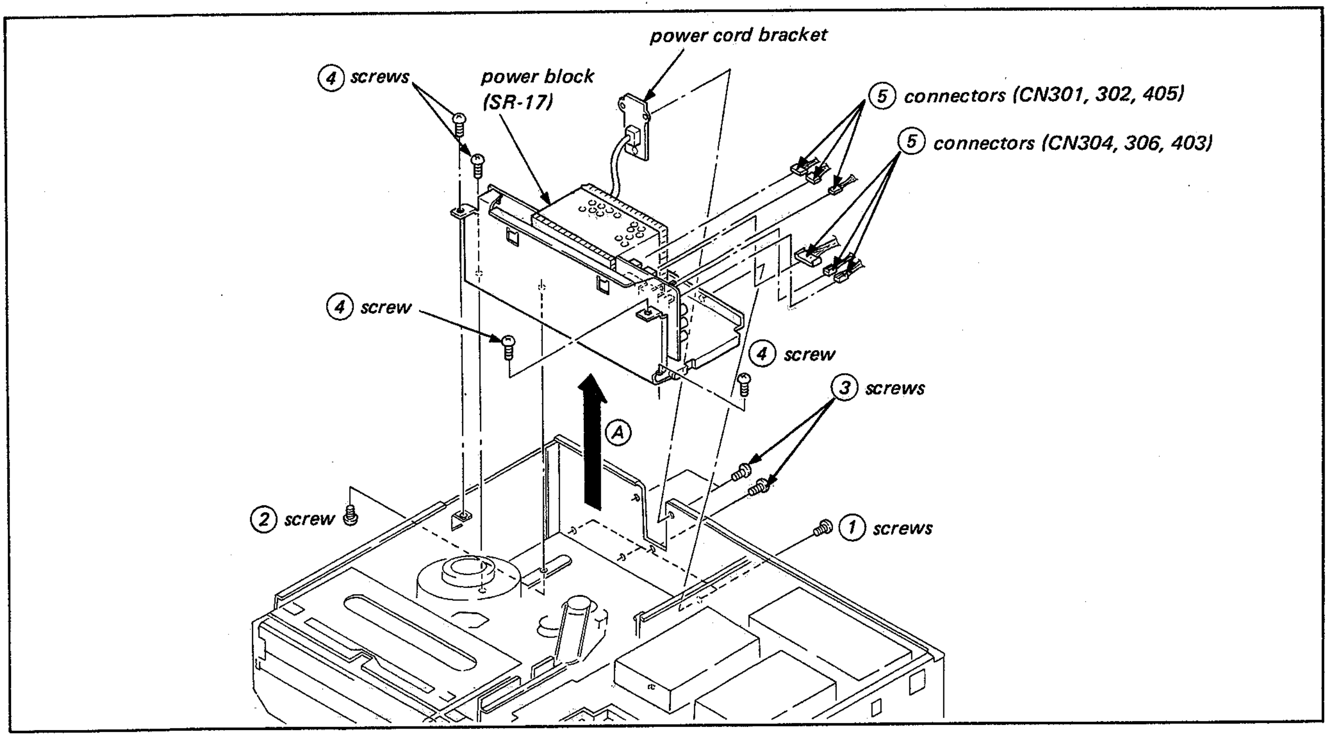

power cord bracket
④ screws
power block (SR-17)
⑤ connectors (CN301, 302, 405)
⑤ connectors (CN304, 306, 403)
④ screw
④ screw
③ screws
Ⓐ
② screw
① screws

Fig. 1-5. Removing of Power Block

1-6. MECHANICAL OPERATION AFTER REMOVING THE FL CASSETTE COMPARTMENT

1-6-1. Attaining Threading Complete State after Removing the FL Cassette Compartment.

Refer to Section 3-6 describing the dismounting of the FL cassette compartment.

1) Short Pins (1) and (2) and also Pins (3) and (4) of the connector (CN301) on the CS-3 board using two wires.

   Caution:
   Do not contact other parts in the set with the wires.

2) Threading is started by turning on the POWER button while pushing the CASSETTE IN switch with a finger.

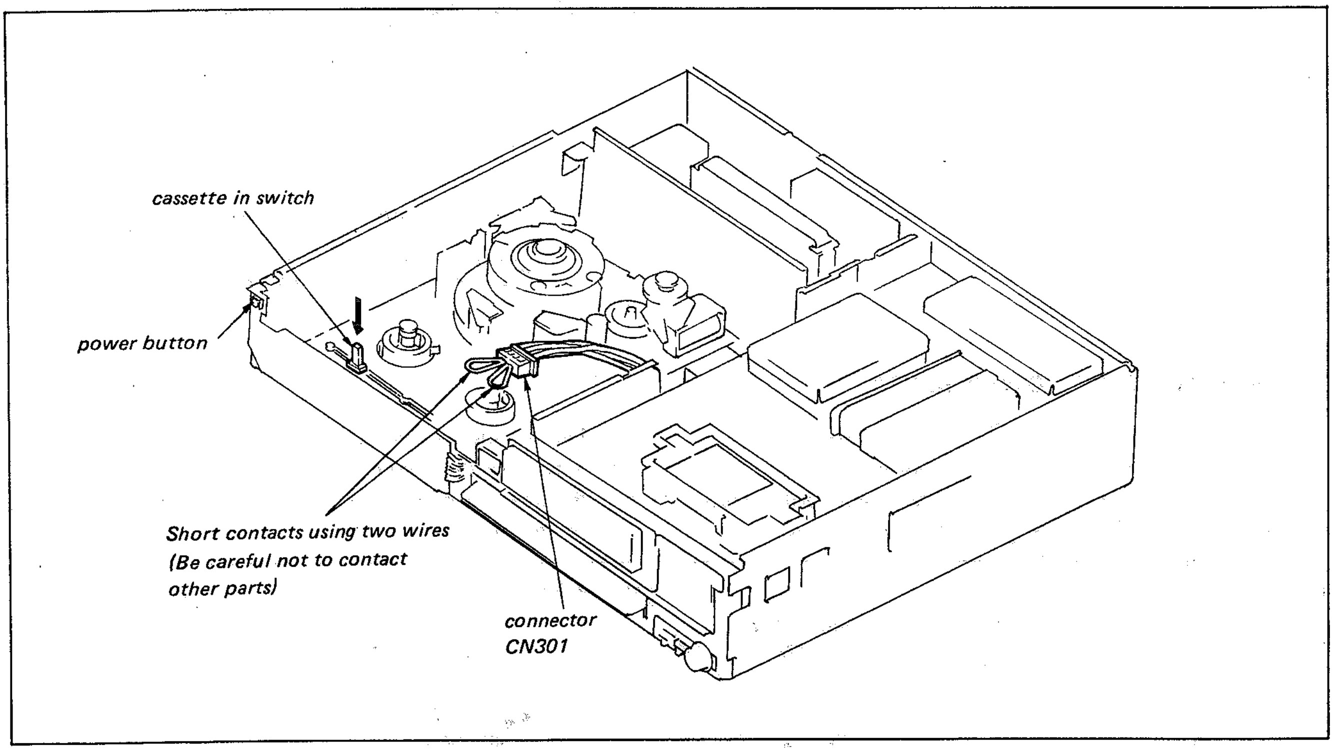

cassette in switch
power button
Short contacts using two wires
(Be careful not to contact
other parts)
connector
CN301

Fig. 1-6. Threading After Removing FL Cassette Compartment

1-6-2. Setting Up PLAY Mode without Inserting a Cassette

Press the PLAY button after setting up the threading complete state as described in 1-6-1.

1-6-3. Setting Up REC Mode without Inserting a Cassette

1) Thread as described in 1-6-1, then press the RECORD PROOF switch shown in the diagram.
2) Press the REC button while depressing the RECORD PROOF switch.

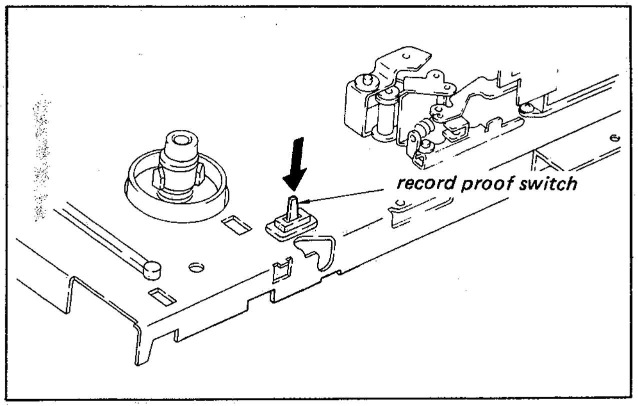

record proof switch

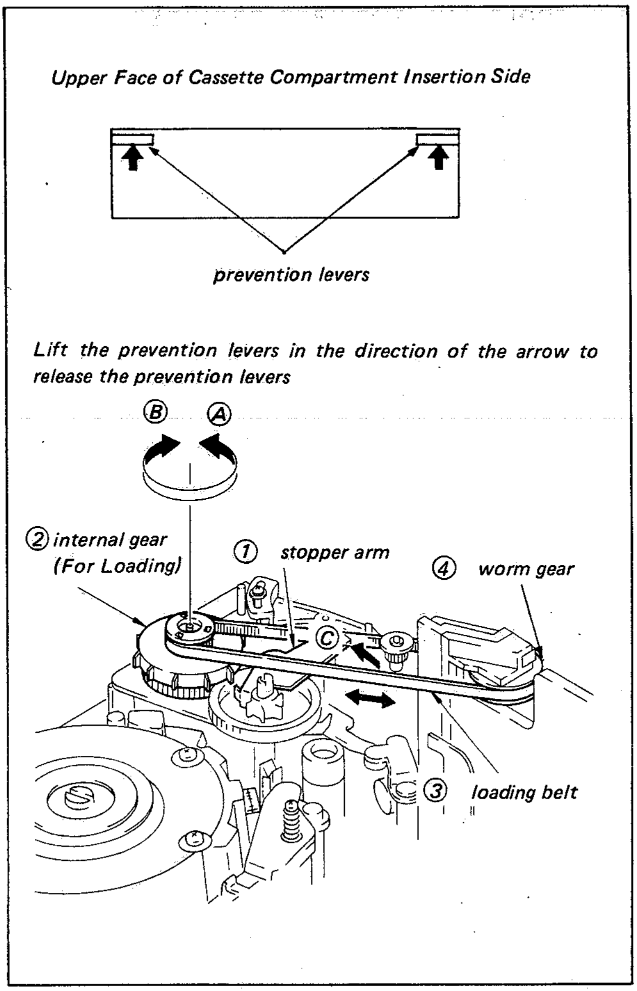
Fig. 1-7. Setting Up the REC Mode After Removing FL Cassette Compartment.

1-7. LOADING, THREADING, UNLOADING, AND UNTHREADING WHILE THE POWER IS OFF

1-7-1. Manual Loading and Unloading

1) Press stopper arm ① in the direction of the arrow Ⓒ after releasing the prevention levers on the right and left sides inside the cassette compartment. Unlock the internal gear ②.
2) Rotate the internal gear ② in the direction of the arrow Ⓐ until loading is completed.
3) Rotate the internal gear ② in the direction of the arrow Ⓑ during unloading.

Note:
Rotate the worm gear ④ with a finger to load and unload when the loading belt ③ has become detached.


Upper Face of Cassette Compartment Insertion Side

Lift the prevention levers in the direction of the arrow to release the prevention levers

Fig. 1-8. Manual Loading and Unloading

1-7-2. Manual Threading and Unthreading

1) Rotate the loading gear in direction of the arrow Ⓐ until threading is completed.
2) Rotate the loading gear in the direction of the arrow Ⓑ for unthreading.

Caution:
Do not use a screwdriver, or other item, to rotate the loading gear. Push the side of the gear with a finger to rotate.

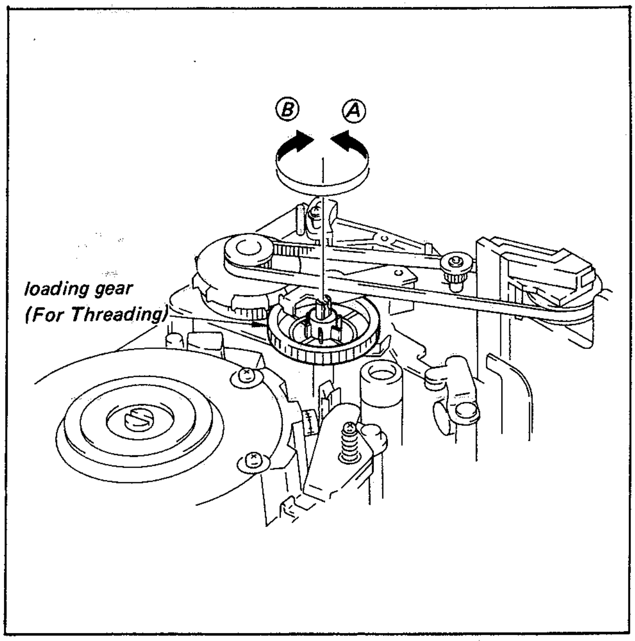


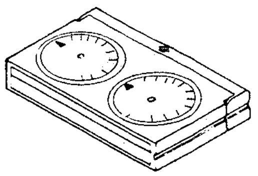
Fig. 1-9. Manual Threading and Unthreading

1-8. TOOLS AND FIXTURES REQUIRED

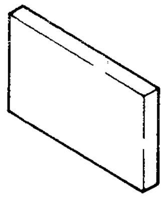
Ref. No.	Name	Part No.	Fixture No.
J-1	Forward-Back Tension Measurement Tape	J-6080-003-C	SL-0003C
J-2	Parallel Plate	J-6086-750-A	SL-0657
J-3	Small Adj. Mirror Spare Mirror	J-6080-029-A J-6080-030-1	SL-5052
J-4	Alignment Tape	8-969-995-52	KR5-2H
J-5	Cleaning Fluid	Y-2031-001-0	
J-6	Thickness Gauge	9-911-053-00	
J-7	Cleaning chamois	2-034-697-00	
J-8	Head Demagnetizer		
J-9	Lapping Tape	8-888-004-00	
J-10	Dihedral Adj. Screw	J-6080-013-1	SL-0013
J-11	Sector type gauge 50 g Max	7-732-050-20	
J-12	Reel Table Tension Fixture	J-6080-011-A	SL-0011

ITEMS J-5, J-6, J-7, J-8 can be obtainted locally

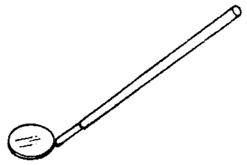
J-1



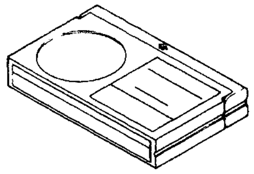
J-2



J-3

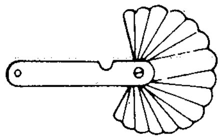


J-4

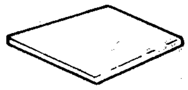


J-5

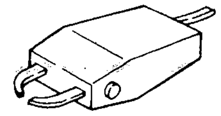
J-6



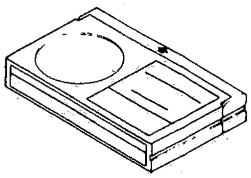
J-7



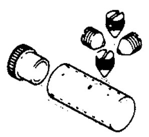
J-8



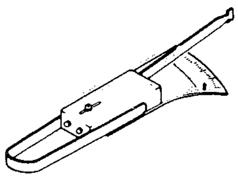
J-9



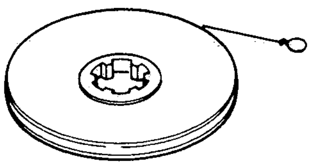
J-10



J-11



J-12



SECTION 2
PERIODIC CHECK AND MAINTENANCE

The following maintenance and periodic checks are recommended to ensure optimum machine function and performance and to prolong machine and tape life.

2-1. MAINTENANCE AFTER REPAIR

Carry out maintenance work for the following items after repairing the machine regardless of the period of use.

2-1-1. Rotary Head Disc Assembly

1) Place a piece of chamois (tool Ref. No. J7) soaked in cleaning fluid (tool Ref. No. J5) lightly against the rotary drum assembly and clean the rotary head disc assembly by slowly rotating it by hand. (Important-Do not clean by rotating with the motor on.)
2) Do not clean the head tip by moving the chamois in a vertical direction. This may damage the head tip.

2-1-2. Cleaning of the Tape Transportation System

Clean the tape contact surfaces, such as the tape guide, drum assembly surfaces, capstan, and pinch roller using cleaning piece etc. soaked in cleaning fluid.

2-1-3. Cleaning of the Drive System

Clean the driving elements (reel base surfaces, etc.) using a cloth soaked in cleaning fluid.

2-2. PERIODIC CHECK ITEMS

Carry out maintenance checks for the following items depending on the duration of use.

Operating Hours (H) / Maintenance & Check		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape Trans-Portation System	Cleaning of tape transportation system	○	○	○	○	○	○	○	○	○	○	This cleaning must be done whenever a repair is made.
	Cleaning and degaussing of ACE ass'y	○	○	○	○	○	○	○	○	○	○	
	Cleaning & degaussing of video disk ass'y	○	○	○	○	○	○	○	○	○	○	The life of the head varies, depending on operational conditions and method.
Driving System	Loading belt	○	○	○	○	○	○	○	★	○	○	• This cleaning must be done whenever a repair is made. • Replacement must be done depending on operating hours on the table, or every two years.
	Cleaning of iron core and opening of solenoid	–	–	–	○	–	–	–	○	–	–	Wipe iron core and opening of solenoid with dry cloth.
Performance Confirmation	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace the section which causes abnormal sound.
	Measurement of FWD back tension	–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to section Specified value: 30 ± 5 g·cm (When measured with torque cassette tape)
	Confirmation of brake system	–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to section
	Confirmation of record & playback functions	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Perform the confirmation whenever repair is made.

○ Cleaning ★ Replacement ☆ Confirmation

Note: When overhauling, refer to the above for part replacement.

SECTION 3
CHECK, ADJUSTMENT, AND REPLACEMENT PROCEDURES

3-1. REPLACEMENT OF ROTARY HEAD DISC ASSEMBLY

3-1-1. Removal of Rotary Head Disc Assembly

1) Unscrew the two screws ① holding the damper assembly and remove it.
2) Remove the hexagonal socket bolt ② with an Allen wrench and dismount the upper drum assembly.

   Note:
   Remove the upper drum while rotating it, without moving the adjust plate ④. Be very careful not to move the adjust plate ④, or tape path will be affected.
3) Unsolder the rotary head disc circuit board. (four red and white lead wires)
4) Remove the two hexagonal socket bolts ③ and dismount the disc assembly.

   Note:
   Be very careful not to touch the head tip, or touch it against anything.

3-1-2. Replacement

1) Position the rotary head disc, paying attention to the direction of the red and white lead wires.
2) Tighten the hexagonal socket bolt ③ and solder the lead wire.

   Note:
   Solder securely, being careful not to break the lead wires.
3) Mount the upper drum without moving the adjust plates ④ as when dismounting it and tighten the hexagonal socket bolt ② while pressing two height adjust sections.

   Caution:
   Be careful not to touch the head tip when replacing the drum.

   Note:
   When replacing the rotary drum head, it may be difficult to remove it from the head disc. In this event, follow the procedure below. (Fig. 3-2)

   (1) Remove the hexagonal socket bolts ③ bolting the rotary head disc assembly.
   (2) When the rotary head disc assembly is fitted tightly and cannot be readily dismounted, alternately and slowly insert the two hexagonal socket bolts ③ unbolted in (1) above it removal holes at 90° to the mounting holes. The rotary head disc assembly can be lifted by the force of the two screws and dismounted easily.

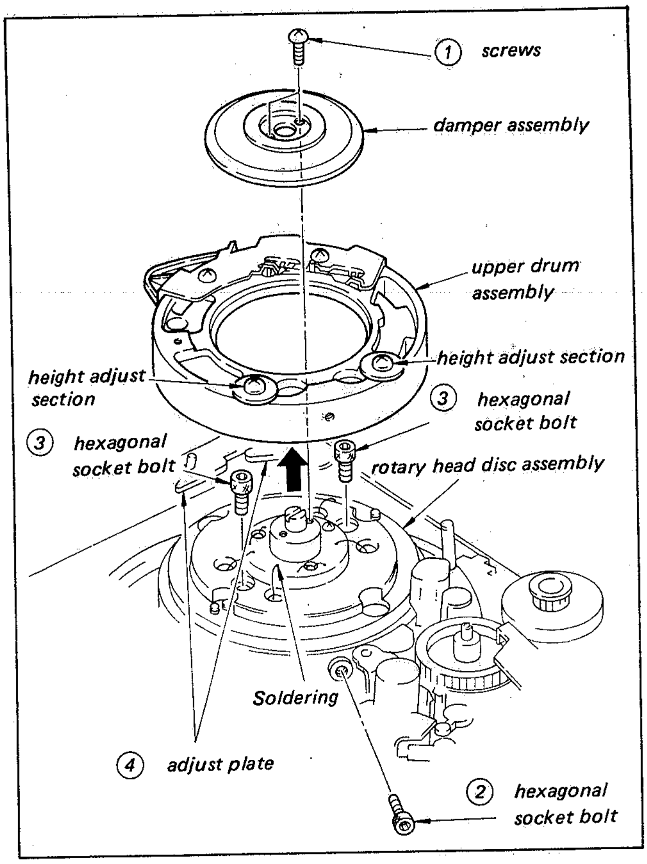

① screws
damper assembly
upper drum assembly
height adjust section
height adjust section
③ hexagonal socket bolt
③ hexagonal socket bolt
rotary head disc assembly
Soldering
④ adjust plate
② hexagonal socket bolt

Fig. 3-1. Dismounting the Rotary Head Disc Assembly

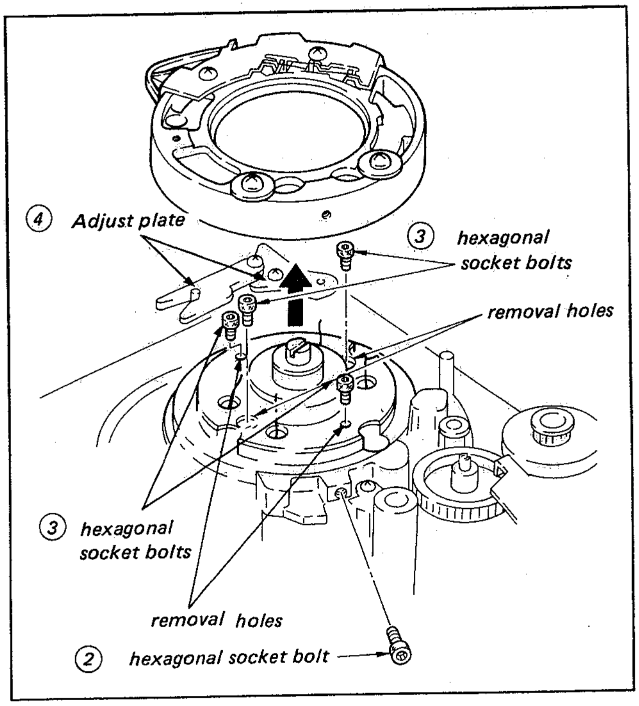

④ Adjust plate
③ hexagonal socket bolts
removal holes
③ hexagonal socket bolts
removal holes
② hexagonal socket bolt

Fig. 3-2. Replacing Rotary Head Disc Assembly

3-2. VIDEO HEAD DIHEDRAL ADJUSTMENT

Generally this adjustment is not necessary except after video head disc replacemet. (Video head discs for repair and replacement are precision adjusted using a microscope, and there is virtually never a need for readjustment.)
When determining the appropriate video head angle, play back an alignment tape. Make sure the tracking control knob is set at the center click position. When the check is made at a position other than the center click (tracking is off), the pictures will be played back as if the angle is wrong even if it is correct.
Be sure the ACE assembly position adjustment is completed (refer to "Tape Path Adjustment") before making this adjustment.

[Checking Method]

Play back the monoscope signal section of the alignment tape (KR5-2H) after setting the tracking control knob at the center click position . Verify that only one monoscope perpendicular line is played back immediately underneath the switching pulse, and not two lines.
If only one perpendicular line can be seen, the angle is correct, and no adjustment is needed.
If there are two, adjust as follows.

[Adjustment Procedure]

1. As shown in Fig. 3-3, screw in the two angle adjustment screws (Tool Ref. No.J-10) so that the lead wires from the video head are on the same level as the red adjusting screw hole and the top of the adjusting screw hole, and the top of the adjusting screw is on the same level as the top of the video head disc.
   (If not screwed in sufficiently, the heads of the adjustment screws hit the upper drum, and the video head disc no longer rotates. Conversely, if they are screwed in too far, the head base moves, and the angle of the video head shifts considerably.)

   Caution:
   The white lead wire is a reference wire and should never be moved.
2. Screw in either one of the two adjustment screws until it feels tight. Additional tightening beyond this position moves the video head and so the angle can be adjusted.
3. Play back the monoscope signal section of the alignment tape (KR5-2H) and verify the angle. If the angle of the perpendicular line is larger than before adjustment, screw the adjustment screw counterclockwise to loosen and adjust the screw on the other side.
4. After adjusting, unscrew and check again.

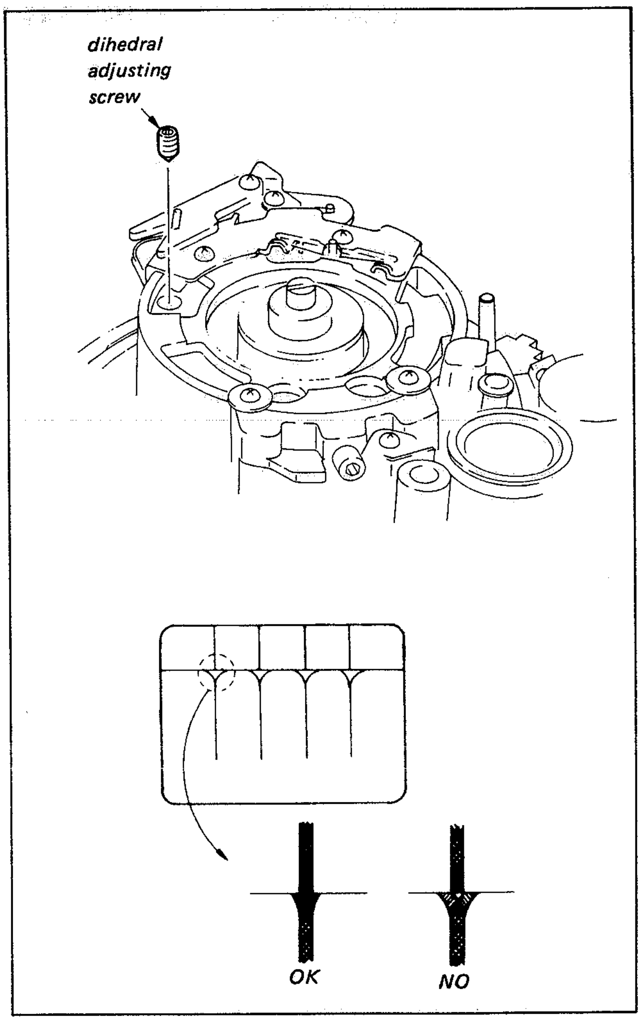


Fig. 3-3. Video Head Dihedral Adjustment (1)

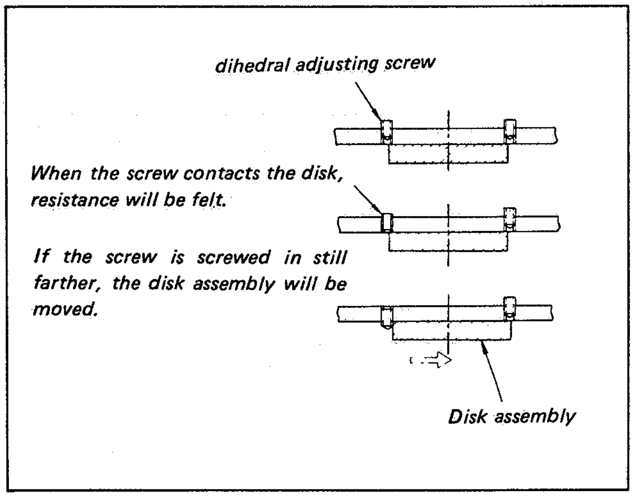

dihedral adjusting screw
When the screw contacts the disk, resistance will be felt.
If the screw is screwed in still farther, the disk assembly will be moved.
Disk assembly

Fig. 3-4. Video Head Dihedral Adjustment (2)

3-3. REPLACEMENT AND ADJUSTMENT OF DRUM ASSEMBLY

3-3-1. Replacement

1) Measure and record the two gaps (Ⓐ) between the upper drum tape holding section and the adjust plates (in Fig. 3-5). (Do not forget to do this, as the adjust plate mounting position affects the tape path.)
2) Unscrew the screws ① shown in Fig. 3-5 and remove the tape guide ground plate and adjust plates (2) and (3-1).
3) Remove the connector and three drum mounting screws from the bottom of the chassis and remove the drum assembly body.
4) Re-assemble the parts in reverse order.
5) Adjust according to "Tape Path Adjustment" after replacing the drum.

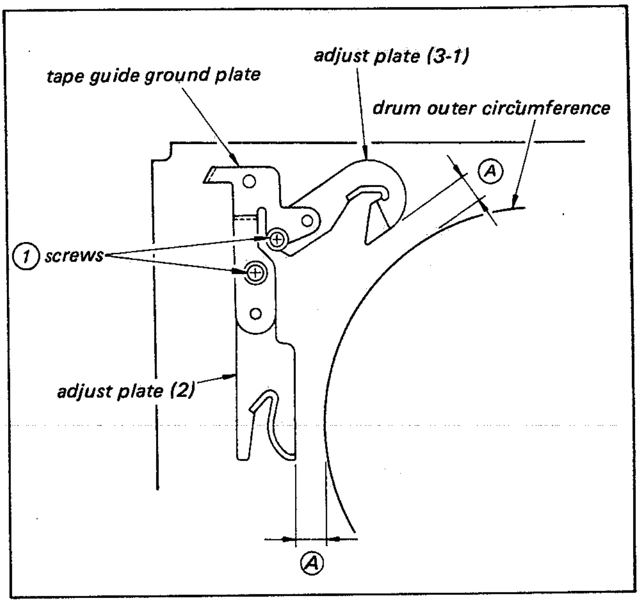

tape guide ground plate
adjust plate (3-1)
drum outer circumference
Ⓐ
① screws
adjust plate (2)
Ⓐ

Fig. 3-5. Replacing Drum

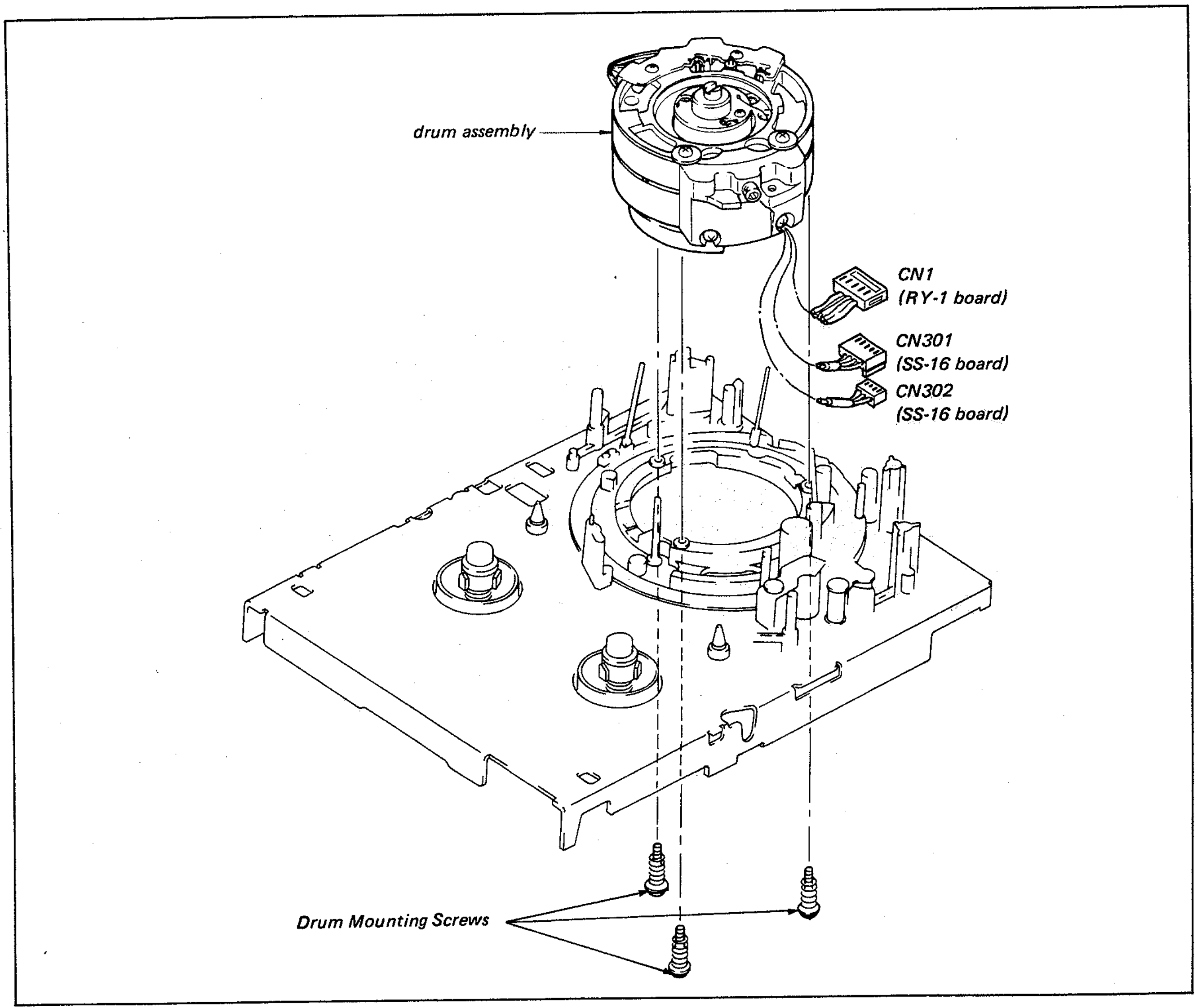

drum assembly
CN1
(RY-1 board)
CN301
(SS-16 board)
CN302
(SS-16 board)
Drum Mounting Screws

Fig. 3-6. Dismounting Drum Assembly

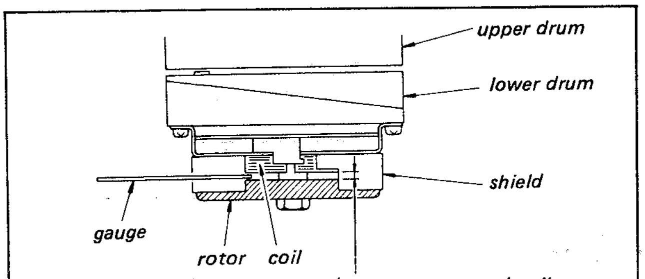
3-3-2. Motor Clearance Adjustment when Replacing Drum Assembly

When replacing the drum assembly, adjust so that clearance between the rotor and coil is 0.3 — 0.6 mm. (See Fig. 3-7)

[Procedure]

1) When re-assembling the drum, use the spacer which was removed and confirm that the 0.3 mm side of the clearance gauge included with the repair drum can be inserted, and that the 0.6 mm side cannot be inserted.
2) If this specification is not satisfied, dispose of the old spacer and use the spacers (0.3 mm x 4) included with the new repair drum as needed.

- **Clearance Confirmation**


upper drum
lower drum
shield
gauge
rotor
coil

Insert clearance gauge between rotor and coil, and confirm that the space is more than 0.3 mm and less than 0.6 mm.

Fig. 3-7. Adjusting Motor Clearance When Replacing Drum Assembly

[Removal of Stator, Rotor]

1) Remove nut ① and washer ②.
2) Remove rotor ③ from stator ④.
3) Unscrew the two screws ⑤ and remove stator from drum body.

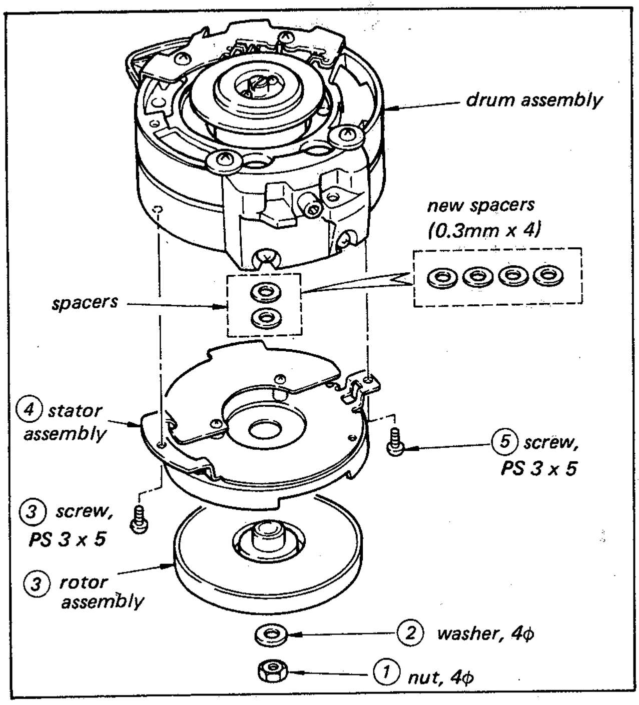

drum assembly
new spacers
(0.3mm x 4)
spacers
④ stator assembly
⑤ screw, PS 3 x 5
③ screw, PS 3 x 5
③ rotor assembly
② washer, 4ϕ
① nut, 4ϕ

Fig. 3-8. Dismounting Stator and Rotor When Replacing Drum Assembly

3-4. REPLACEMENT AND ADJUSTMENT OF CAPSTAN MOTOR

3-4-1. Removal of the Capstan Motor (Fig. 3-9)

Unscrew screws ①, ②, ③ and remove the capstan motor from the mechanism chassis.

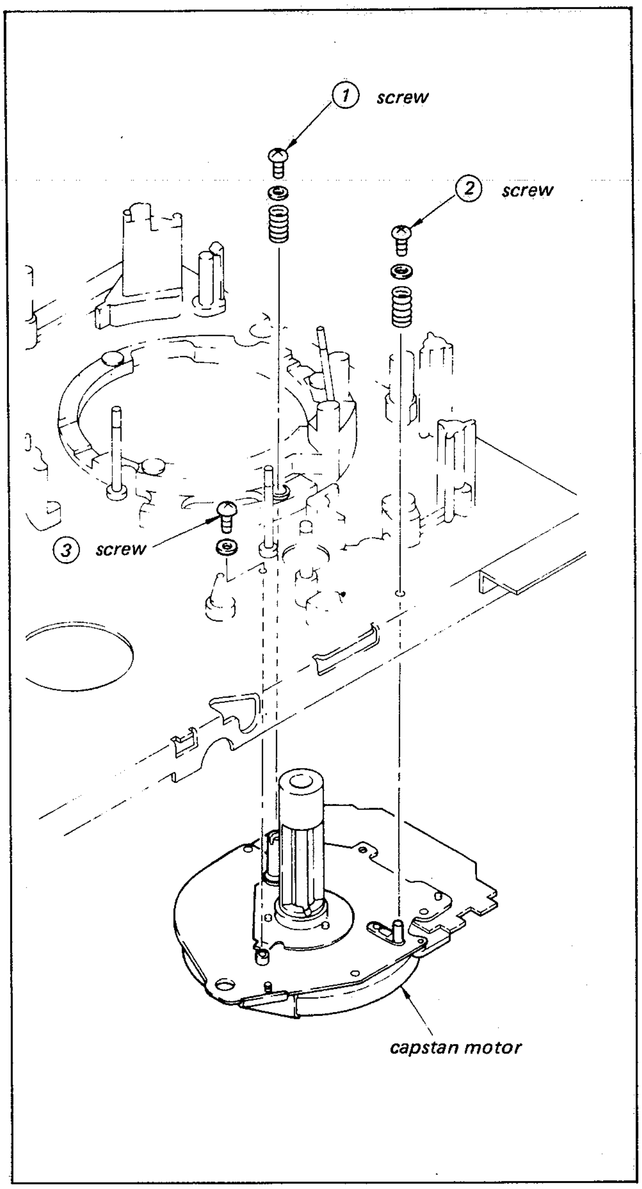

① screw
② screw
③ screw
capstan motor

Fig. 3-9. Dismounting Capstan Motor

3-4-2. Perpendicular Adjustment of Capstan Spindle

Be sure to adjust as follows after the capstan motor has been replaced or removed:

1) Place parallel plate (Tool Ref. No. J-2) on No. 10 guide sleeve of the pinch press arm assembly perpendicularly, as shown in Fig. 3-10.
2) Loosen screw ①.
3) Rotate adjusting screw ② and align the capstan spindle perpendicularly.
4) Tighten screw ① and fix the capstan motor.
5) Adjust according to "Tape Path Adjustment".

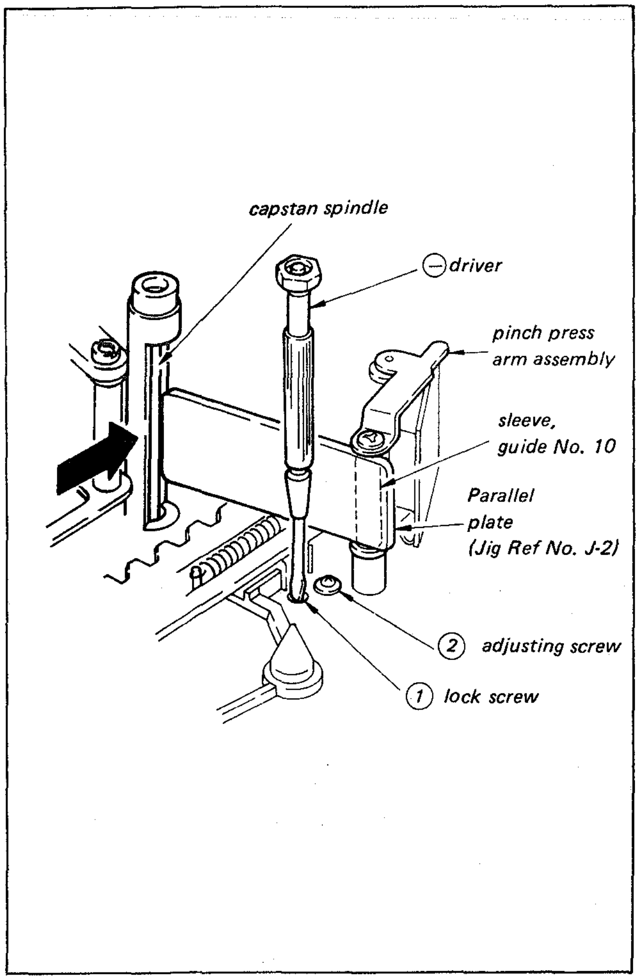

capstan spindle
⊖driver
pinch press arm assembly
sleeve, guide No. 10
Parallel plate (Jig Ref No. J-2)
② adjusting screw
① lock screw

Fig. 3-10. Perpendicular Adjustment of Capstan Motor Spindle

3-5. REMOVAL OF S COIL SENSOR ASSEMBLY (Fig. 3-11)

1) Remove spring ① and disengage hook ② to pull out the S coil sensor assembly.
2) Disconnect the connector from CN604 of the SS-16 board.

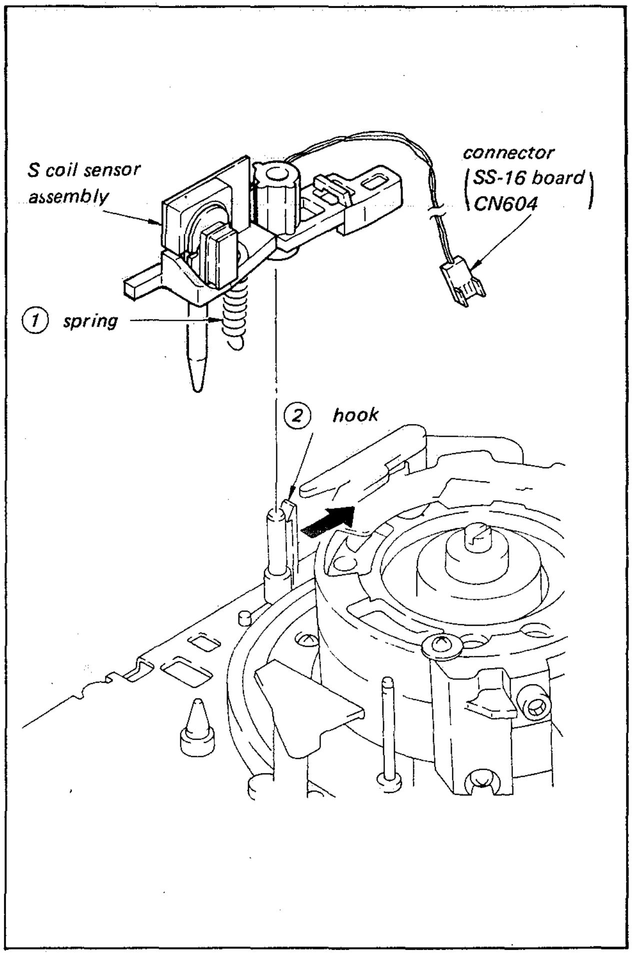

S coil sensor assembly
connector (SS-16 board CN604)
① spring
② hook

Fig. 3-11. Dismounting Tension Pickup Assembly

3-6. REMOVAL OF FL CASSETTE COMPARTMENT ASSEMBLY

1) Loosen the loading belt ①, exerting a force on the threading motor.
2) Remove the five mounting screws ② of the FL cassette compartment.
3) Disconnect the exposed connector from the CS-3 board (CN001) on the FL cassette compartment.
4) Lift the FL cassette compartment assembly in the direction shown by the arrow to remove.

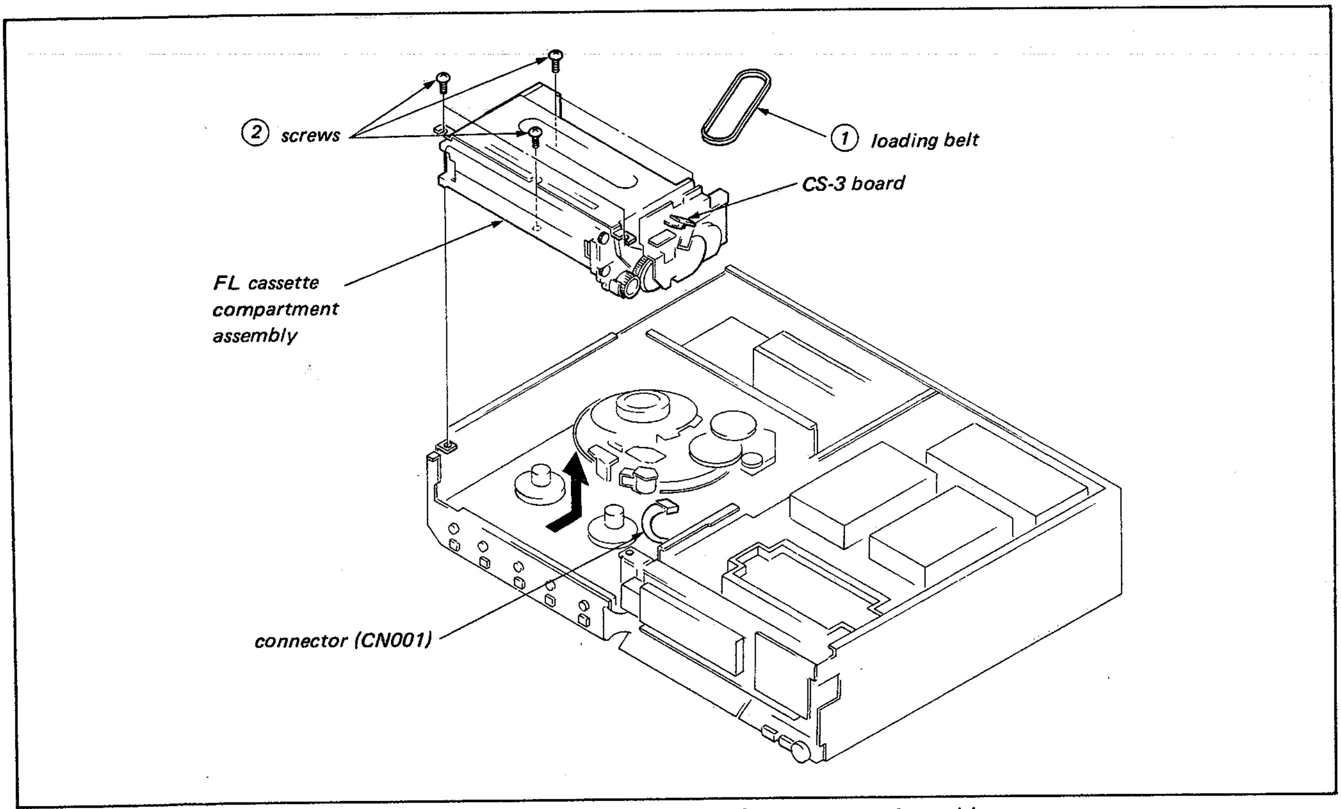

② screws
① loading belt
CS-3 board
FL cassette compartment assembly
connector (CN001)

Fig. 3-12. Removal of FL Cassette Compartment Assembly

3-7. ADJUSTMENT OF FL CASSETTE COMPARTMENT ASSEMBLY

3-7-1. Mounting of FL Cassette Compartment Assembly (Fig. 3-13, 14)

1) Stretch the two hooks ② of the FL cassette compartment on the mechanism chassis and place the cassette compartment in a predetermined position on the chassis.
2) Mount the FL cassette compartment assembly and loosely tighten the three screws ③.
3) Move the FL cassette compartment assembly longitudinally relative to the mechanism chassis, set in a predetermined position, then securely tighten the three mounting screws ③.
4) Suspend the loading belt ⑦ around the threading motor ④, tension pulley arm ⑤, and worm gear ⑥ and hold the loading belt ⑦ with the internal gear flange ⑧.
5) Push the car tension arm ⑤ in the direction of the arrow, to eliminate slack on the loading belt ⑦, then secure the arm ⑤ with the arm adjustment screw ①.
6) Insert the connector of the wire harness protruding from the body onto the connector CN001 ⑨ of the CS-3 board.

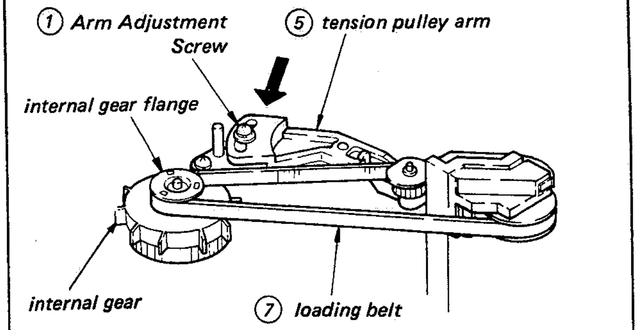

① Arm Adjustment Screw
⑤ tension pulley arm
internal gear flange
internal gear
⑦ loading belt

Fig. 3-14. Adjustment of Loading Belt

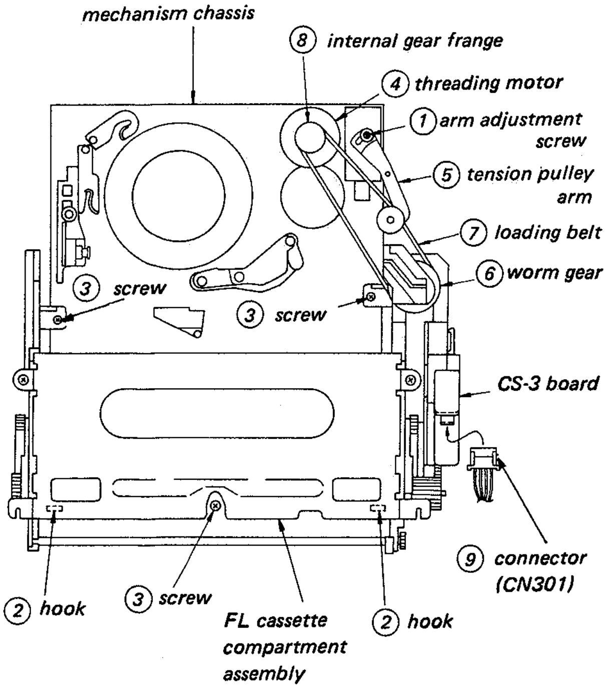

mechanism chassis
⑧ internal gear frange
④ threading motor
① arm adjustment screw
⑤ tension pulley arm
⑦ loading belt
⑥ worm gear
③ screw
③ screw
CS-3 board
⑨ connector (CN301)
② hook
③ screw
FL cassette compartment assembly
② hook

Fig. 3-13. Remounting FL Cassette Compartment

3-7-2. Adjustment of Cassette-ON Switch

Loosen the screw ② which is fixing the cassette-ON cam ①. Move the cassette-ON cam in the arrow direction so that the microswitch (cassette on) ⑤ is turned on when the gap between the left end of the driving roller ③ and the end/face/of the worm gear holder ④ is 8 mm to 10 mm. Then fasten the screw ②.

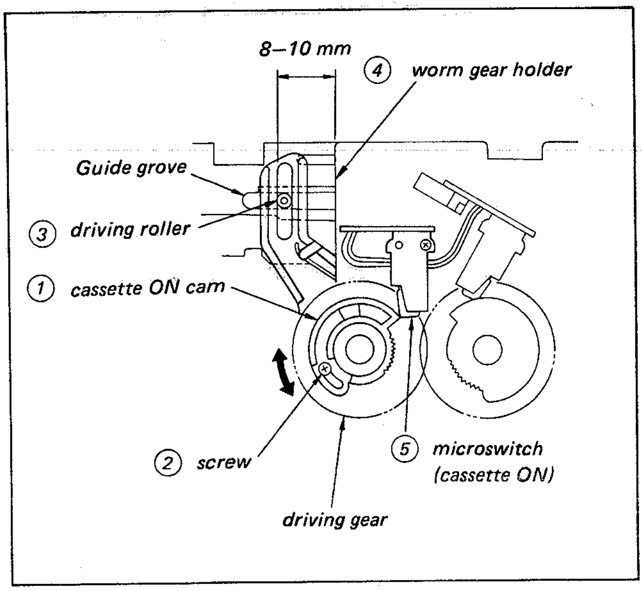

8–10 mm
④ worm gear holder
Guide grove
③ driving roller
① cassette ON cam
② screw
⑤ microswitch (cassette ON)
driving gear

Fig. 3-15. Cassette-ON Switch Operation Check and Adjustment

3-7-3. Adjustment of Cassette-OFF Switch

Loosen the screw ② which is fixing the cassette-OFF cam ①. Move the cassette-OFF cam in the arrow direction so that the microswitch (cassette off) ⑤ is turned off when the gap between the left end of the driving roller ③ and the end face of the worm gear holder ④ is 16 mm to 18 mm. Then fasten the screw ②.

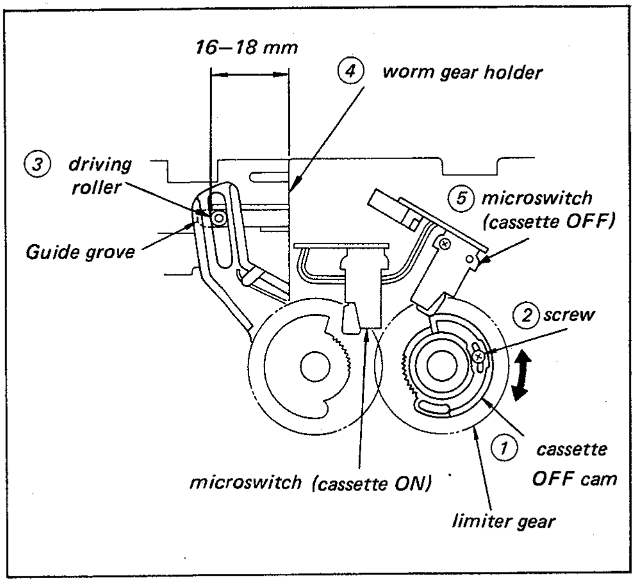

16–18 mm
④ worm gear holder
③ driving roller
Guide grove
⑤ microswitch (cassette OFF)
② screw
① cassette OFF cam
microswitch (cassette ON)
limiter gear

Fig. 3-16. Cassette-OFF Switch Operation Check and Adjustment

3-7-4. Check and Adjustment of Cassette Door Assembly

[Check Procedure]

Be certain that the upper door ② and lower door ③ become perpendicular when the switching door arm ① has fully returned in the direction of the arrow Ⓐ.

[Adjustment Procedure]

Check that the switching door rack plate ④ is fully returned, fit in the directions of arrows Ⓑ and Ⓒ so that the upper door ② and lower door ③ become perpendicular when the tips of the switching door rack plate ④ and side plate, right ⑤ mismatch by about 1 mm, then match the teeth. Fit the outer door holder ⑥ into the side plate, right ⑤ and secure the upper door ② and lower door ③.

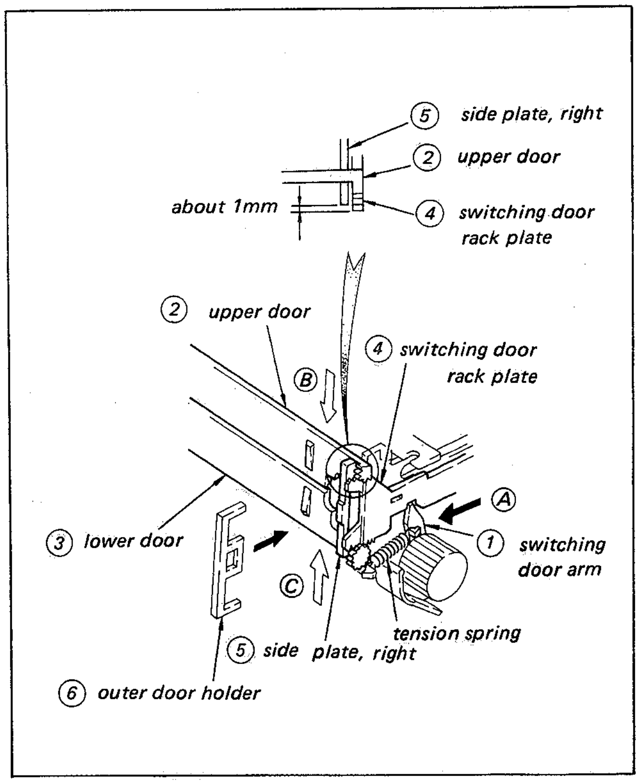

⑤ side plate, right
② upper door
about 1mm
④ switching door rack plate
② upper door
④ switching door rack plate
Ⓑ
Ⓐ
③ lower door
① switching door arm
Ⓒ
tension spring
⑤ side plate, right
⑥ outer door holder

Fig. 3-17. Position Adjustment of Cassette Door Assembly

3-7-5. Position Matching of Right Worm Wheel of FL Cassette Compartment Assembly

In the FL cassette compartment assembly, the cassette holder feed rate is determined using a worm wheel system so that the cassette holder always moves parallel to the mechanism chassis. Therefore, cassette feeding cannot be performed properly unless the worm wheel gearing position is properly adjusted during subsequent assembly once gearing of this section has been moved from the normal position.

[Gear Positioning]

1) Prepare a rod about 1.5 mm thick and 200 mm long.
2) Pass the rod through the hole in the side plate, right and left (Perform on left and right sides.)
3) Insert the assembly comprising the driving arm, right ① and cassette-on cam ② on the positioning rod and assemble it on the right of the side plate, ③. Similarly assemble the driving arm, on the left of the side plate.
4) Insert the worm wheel ④ through the positioning rod as described in 3) above and assemble it on the right of the side plate ③.
5) Insert the assembly comprising the limiter gear ⑤ and cassette-off cam ⑥ on the positioning rod as in 3) and 4) above and assemble it on the right of the side plate ③.
6) After assembling, pull the rod out from the right side.

Note:
If a rod is not available, the holes can be lined up by eye.

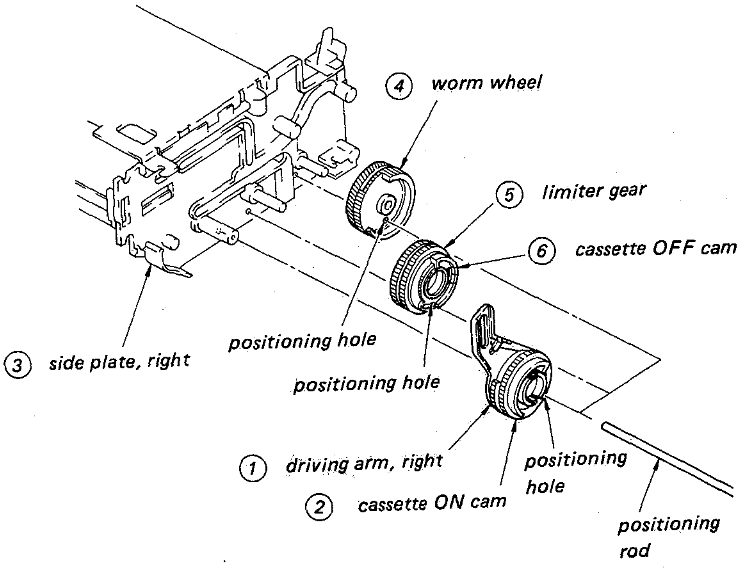

④ worm wheel
⑤ limiter gear
⑥ cassette OFF cam
③ side plate, right
positioning hole
positioning hole
① driving arm, right
② cassette ON cam
positioning hole
positioning rod

Fig. 3-18. Positioning of FL Cassette Compartment Worm Wheel

3-8. REMOVAL OF REEL BLOCK

1) Place the set upside down.
2) Remove four screws ①.
3) Remove the reel block ②.

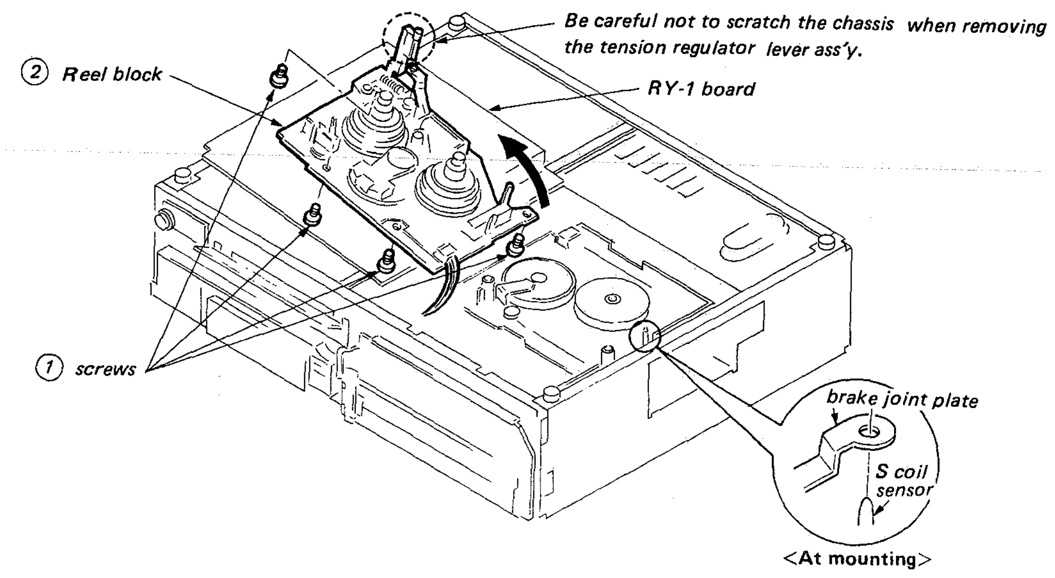

Be careful not to scratch the chassis when removing the tension regulator lever ass'y.
② Reel block
RY-1 board
① screws
brake joint plate
S coil sensor
<At mounting>

Fig. 3-19. Dismounting Reel Block

3-9. UNTHREADING CHECK

1) Press the EJECT button and unthread.
2) Check that the actuator for the unthreading end switch is not tripped as shown in Fig. 3-20. (Slowly rotate the internal gear by hand and verify by the click sound.)
   * Refer to Paragraph 1-7-2 to thread manually.
   Adjust according to Paragraph 3-15-2 if necessary.

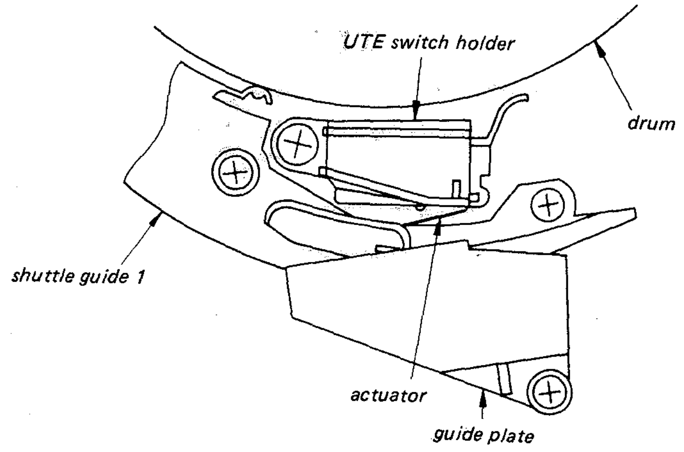

UTE switch holder
drum
shuttle guide 1
actuator
guide plate

Fig. 3-20. UTE Switch

3-10. S THREADING RING REPLACEMENT AND ADJUSTMENT

3-10-1. Preparation for Removal of S Threading Ring

Remove ACE assembly, FE Head and Threading Motor. (Fig. 3-21)

1) Unscrew the Phillips head continuous-thread stepped screw ①.
2) Remove the No. 6 guide nut ②, washer ③, spacer ④ and compression coil spring ⑤. Use a special notched screwdriver. (See Section 1-8, Tools And Fixtures Required)
3) Remove the two guide adjusting nuts ⑥ and the ACE assembly and FE head.

Caution:
ACE assembly and FE head are connected by a lead. Be careful when removing them. The compression coil spring underneath the ACE assembly does not have to be removed. However, be careful not to lose it.

4) Unscrew two screws ⑦ and remove the STOPPER ARM ASSEMBLY BLOCK ⑧.
5) Unscrew the two screws ⑨ and pull the threading motor assembly up to remove.

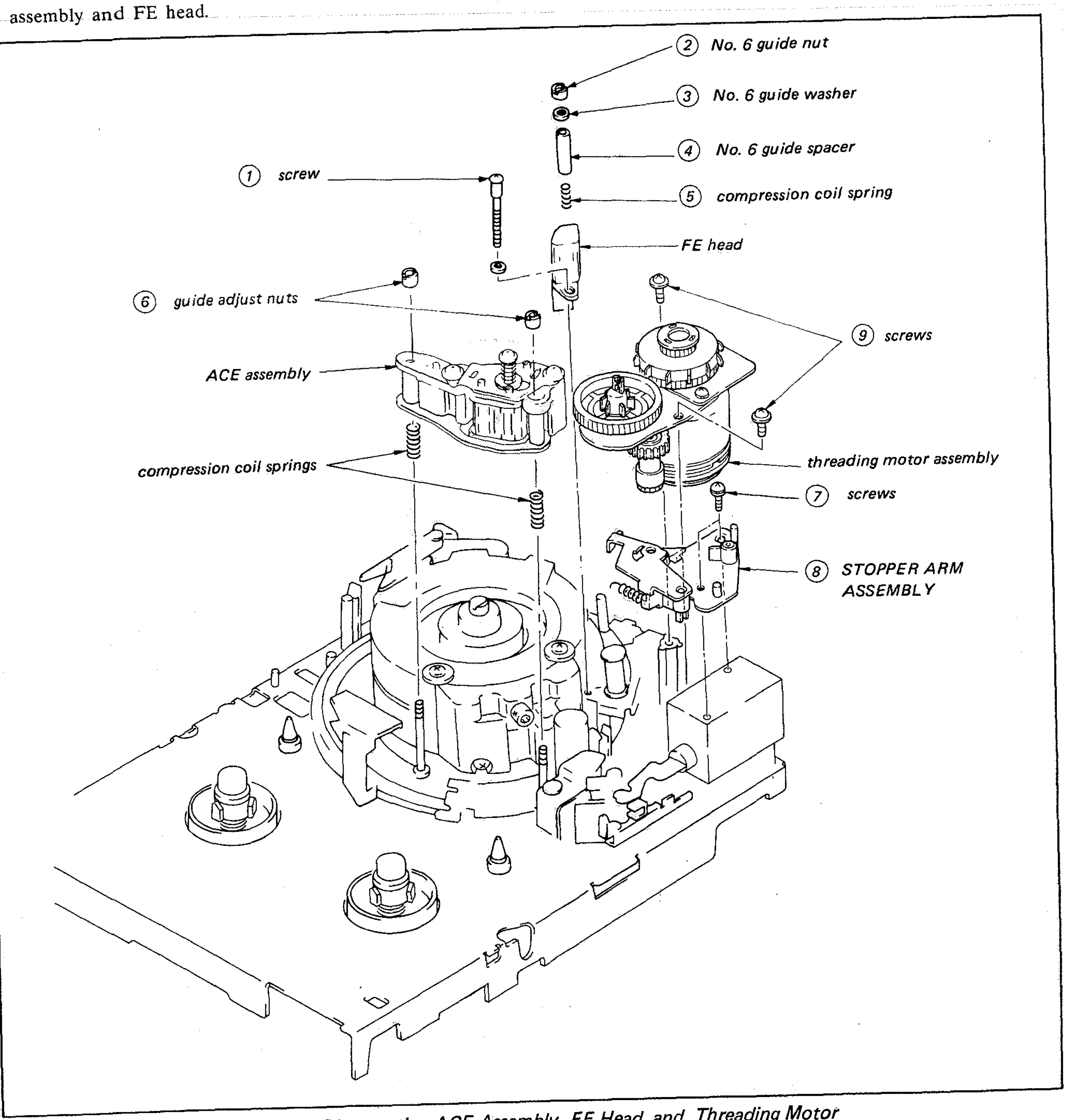
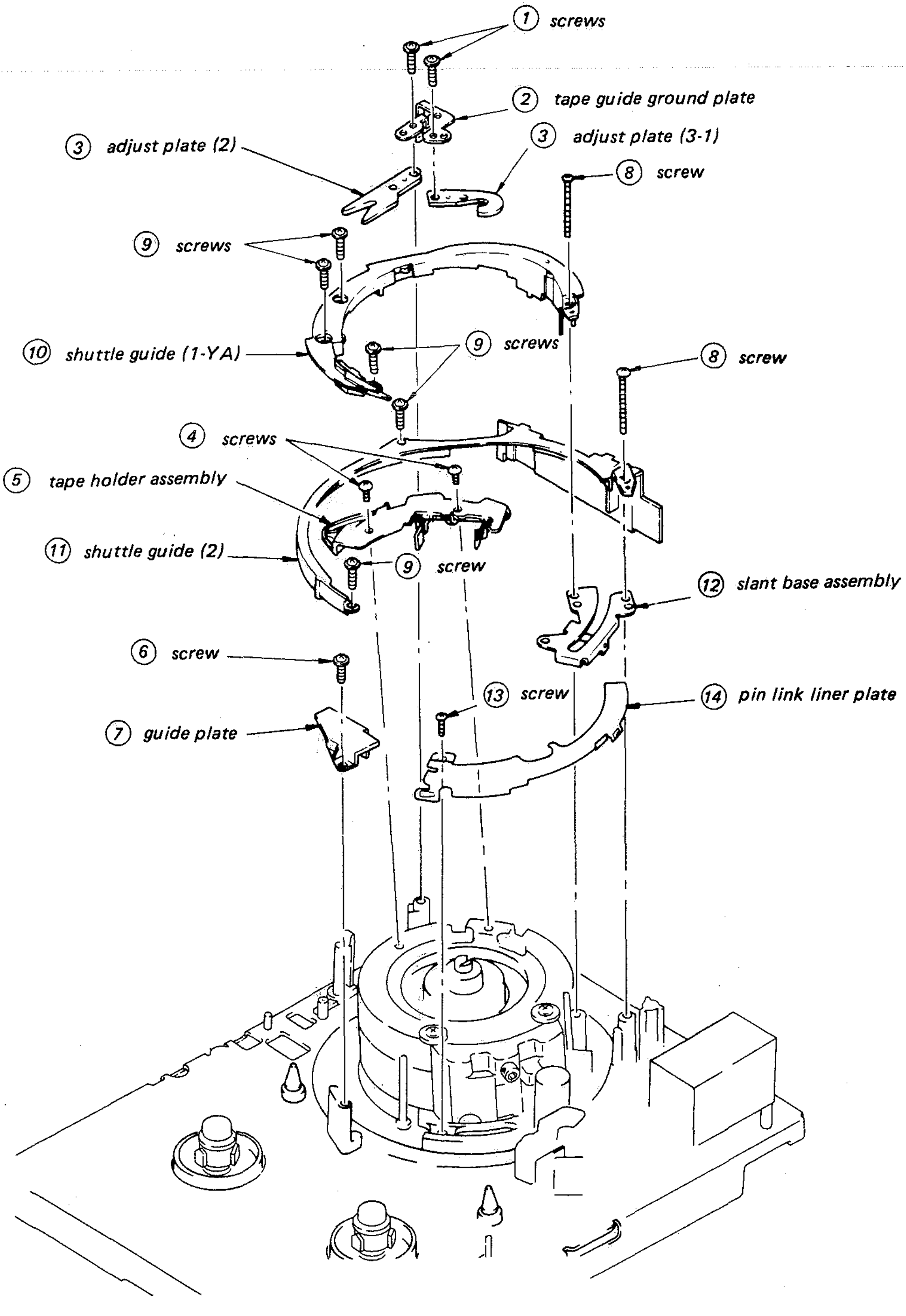

② No. 6 guide nut
③ No. 6 guide washer
④ No. 6 guide spacer
① screw
⑤ compression coil spring
FE head
⑥ guide adjust nuts
⑨ screws
ACE assembly
threading motor assembly
compression coil springs
⑦ screws
⑧ STOPPER ARM ASSEMBLY

Fig. 3-21. Dismounting ACE Assembly, FE Head, and Threading Motor

[Removal of Other Parts] (Fig. 3-22)

1) Measure the gap between the upper drum and the adjust plate as for replacement of the drum assembly. (Fig. 3-5)
2) Unscrew the two screws ① and remove the tape guide ground plate ② and adjust plate ③.
3) Unscrew the two screws ④ and remove the tape holder assembly ⑤
4) Unscrew screw ⑥ and remove the guide plate ⑦
5) Unscrew the two screws ⑧ and five screws ⑨ to remove the shuttle guide (1-YA) ⑩ and (2) ⑪ as well as the slant base assembly ⑫
6) Unscrew screw ⑬ and remove the pin link liner plate ⑭

Caution:
When the guide plate is removed, do not thread or unthread with the shuttle guide mounted.



① screws
② tape guide ground plate
③ adjust plate (2)
③ adjust plate (3-1)
⑧ screw
⑨ screws
⑩ shuttle guide (1-YA)
⑨ screws
⑧ screw
④ screws
⑤ tape holder assembly
⑪ shuttle guide (2)
⑨ screw
⑫ slant base assembly
⑥ screw
⑬ screw
⑭ pin link liner plate
⑦ guide plate

Fig. 3-22. Removing Other Parts

3-10-2. Removal of S Threading Ring (Fig. 3-23)

1) Remove the spring of the lock arm assembly. (Refer to Paragraph 3-15-1, Fig. 3-34)
2) Remove stop washers ① and ring rollers ②, ③.
3) Remove the UTE switch subassembly. (Refer to Paragraph 3-15-2, Fig. 3-38)
4) Unscrew screw ④ and remove the ring roller adjustment plate ⑤ and ring roller ⑥.
5) Remove the S threading ring ⑦.

Caution:
Do not use the same washer twice.

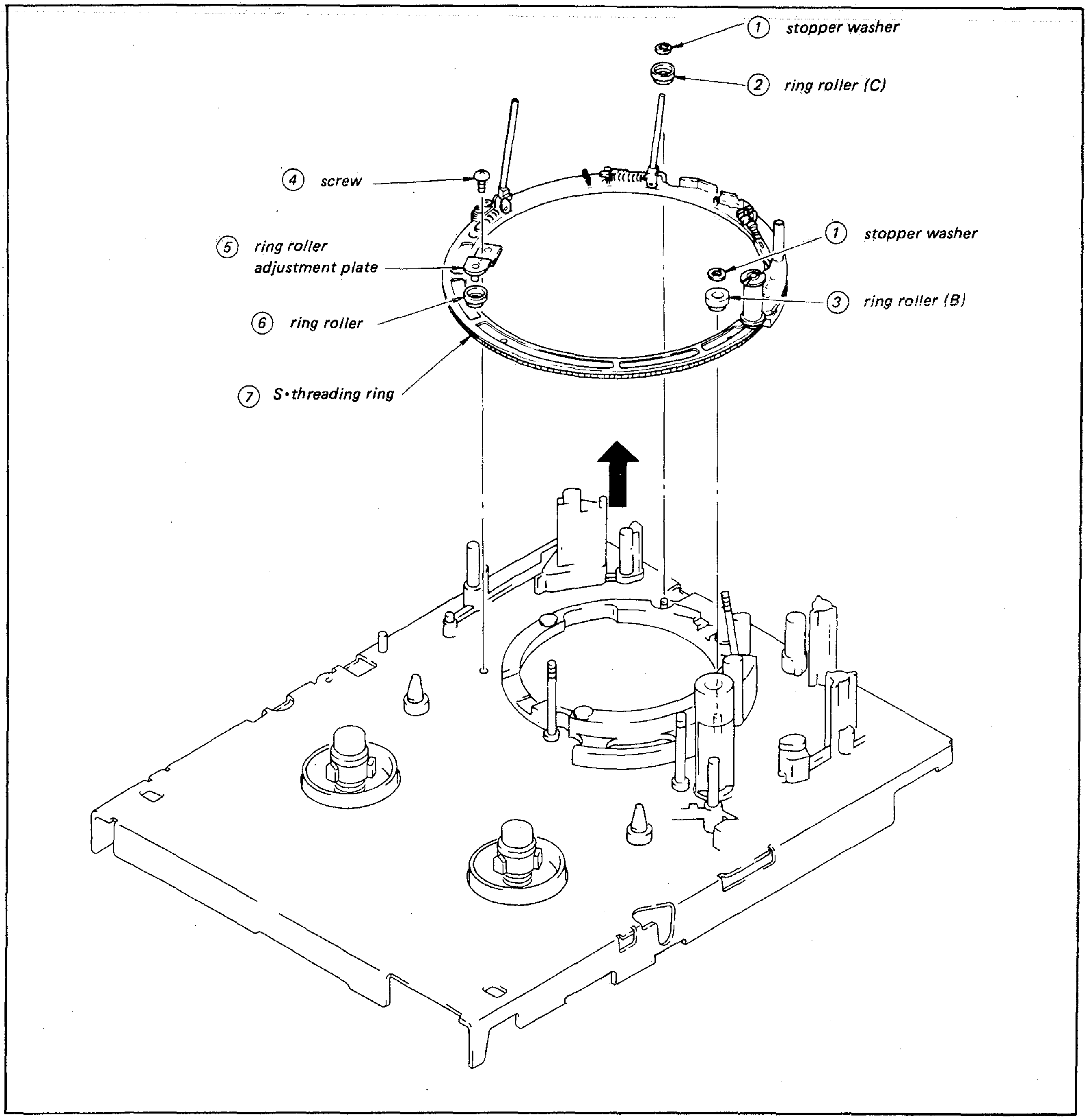
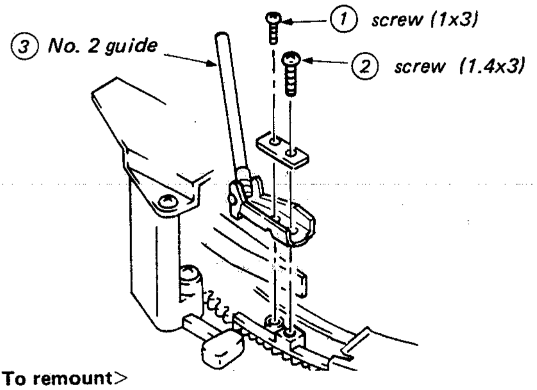

① stopper washer
② ring roller (C)
④ screw
① stopper washer
⑤ ring roller adjustment plate
③ ring roller (B)
⑥ ring roller
⑦ S•threading ring

Fig. 3-23. Removing S Threading Ring

3-10-3. Removal of No. 2 Guide

1) Unscrew the screw (1×3) ①.
2) Unscrew the screw (1.4×3) ②.
3) Remove the No. 2 guide ③.


③ No. 2 guide
① screw (1x3)
② screw (1.4x3)

<To remount>

1) Loosely tighten the 1 x 3 tap-in screw.
2) Tighten the 1.4 x 3 tap-in screw all the way.
3) Adjust the 1 x 3 tap-in screw until the height is 35 mm. After adjustment, lock the screw.
Note: The no. 2 guide is up all the way.

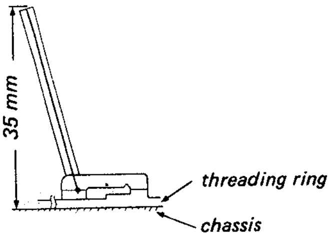
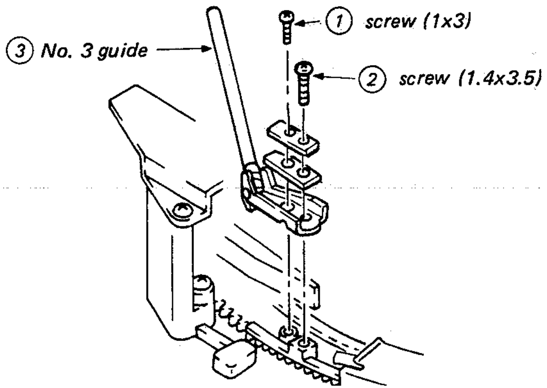

35 mm
threading ring
chassis

Fig. 3-24. Removal of No. 2 Guide

3-10-4. Removal of No. 3 Guide

1) Unscrew the screw (1×3) ①.
2) Unscrew the screw (1.4×3.5) ②.
3) Remove the No. 3 guide ③.


③ No. 3 guide
① screw (1x3)
② screw (1.4x3.5)

<To remount>

1) Loosely tighten the 1 x 3 tap-in screw.
2) Tighten the 1.4 x 3.5 tap-in screw all the way.
3) Adjust the 1 x 3 tap-in screw so that the height is 30 mm. After adjustment, lock the screw.
Note: The no. 3 guide is up all the way.

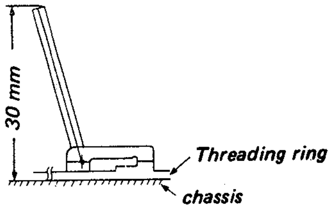

30 mm
Threading ring
chassis

Fig. 3-25. Removal of No. 3 Guide

3-10-5. Checking Slider Stopper Mounting (Fig. 3-26)

1) Check that the drive gear is engaged.
2) Loosen screw ①, insert a spacer ($t = 0.2$) between the slider gear and slider stopper, then tighten screw ① while pushing in the directions of arrows Ⓐ and Ⓑ

Caution:
Make sure to push it in direcition Ⓐ to eliminate any play. The slider stopper rotates in the direction of arrow Ⓒ when screw ① is tightened. Therefore, tighten the screw while holding it with a blade-tip screwdriver.

3-10-6. Replacement of S Threading Ring (Fig. 3-27)

1) Mount the S threading ring.
2) Set the slider gear assembly in the unthreading complete position.
   (Insert a 0.5 mm spacer between the slider stopper and slider gear as shown in Section Ⓐ .)
3) Rotate the S threading ring in the direction of the arrow ⓐ and align the mechanism chassis hole ($\phi3$) and S threading ring hole ($\phi1.5$) of the section Ⓑ .
4) Mesh the drive gear assembly with the S threading ring and fit them into the mechanism chassis.
5) Reassemble after repositioning the gearing of the drive gear assembly and S threading ring gear if the hole positions do not match.

Note:
Adjust the ACE assembly in accordance with Section 4 for tape path adjustment after changing and mounting the S threading ring.

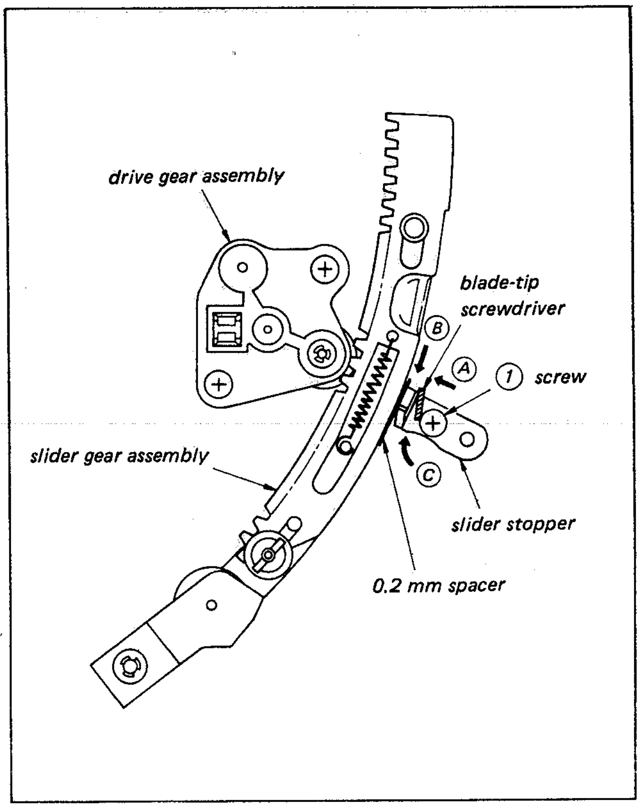

drive gear assembly
blade-tip screwdriver
Ⓑ
Ⓐ
① screw
slider gear assembly
Ⓒ
slider stopper
0.2 mm spacer

Fig. 3-26. Mounting Slider Stopper

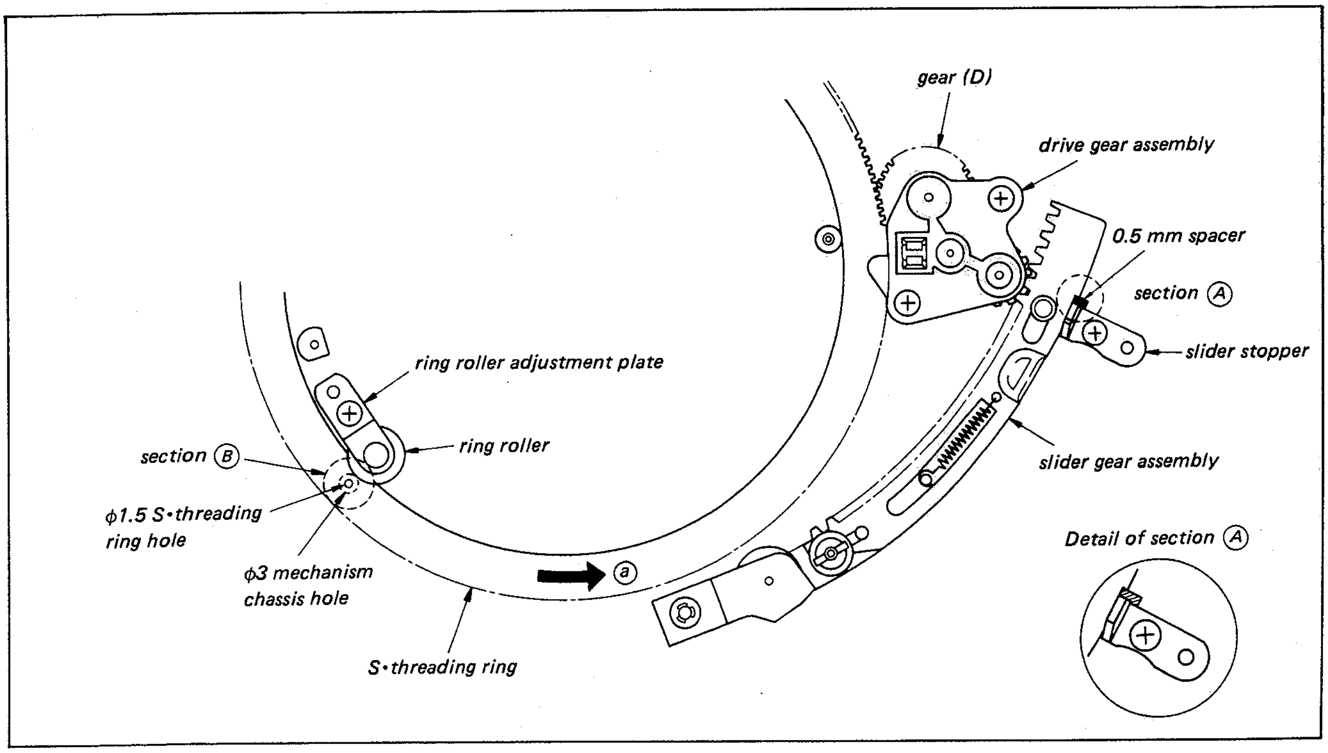

gear (D)
drive gear assembly
0.5 mm spacer
section Ⓐ
slider stopper
ring roller adjustment plate
ring roller
section Ⓑ
φ1.5 S•threading ring hole
φ3 mechanism chassis hole
ⓐ
S•threading ring
slider gear assembly
Detail of section Ⓐ

Fig. 3-27. S threading Ring Position Adjustment

3-11. CHECK AND ADJUSTMENT OF PINCH PRESS LIMITER CLEARANCE

[Check Procedure]

1) Set up a threading completed state.
2) Check that the clearance "t" of the pinch press limiter in Fig. 3-28 is 0.4 — 0.6 mm. If not, adjust as follows:

[Adjustment Procedure]

1) Loosen screw ① in Fig. 3-28 with the pinch solenoid held in.
2) Move the pinch limiter adjust plate (shaded in the diagram) fully in the direction of arrow ⓐ. The clearance "t" at this time is 0.
3) Push the pinch limiter adjust plate in the direction of arrow ⓑ as shown at section Ⓐ using a blade-tip screwdriver, until the clearance "t" is 0.4 — 0.6 mm.
   (Use ϕ0.4 and ϕ0.6 gauges for clearance adjustment)
4) Tighten screw ① and lock it.

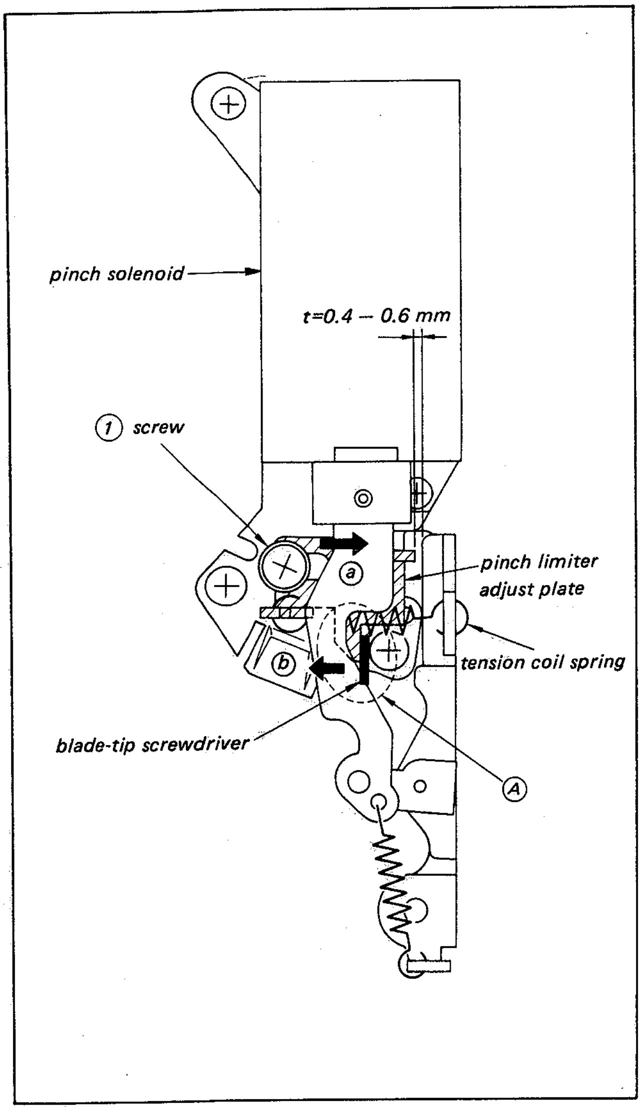

pinch solenoid
t=0.4 – 0.6 mm
① screw
ⓐ
pinch limiter adjust plate
tension coil spring
ⓑ
blade-tip screwdriver
Ⓐ

Fig. 3-28. Pinch Press Limiter Clearance Adjustment

3-12. BRAKE PLUNGER POSITION ADJUSTMENT

1) Loosen the screw ① securing the brake plunger.
2) Adjust the installation position so that the suction stroke of the brake plunger becomes 2 mm.
   When the plunger is in the sucked state, S brake should be separated from S reel table.

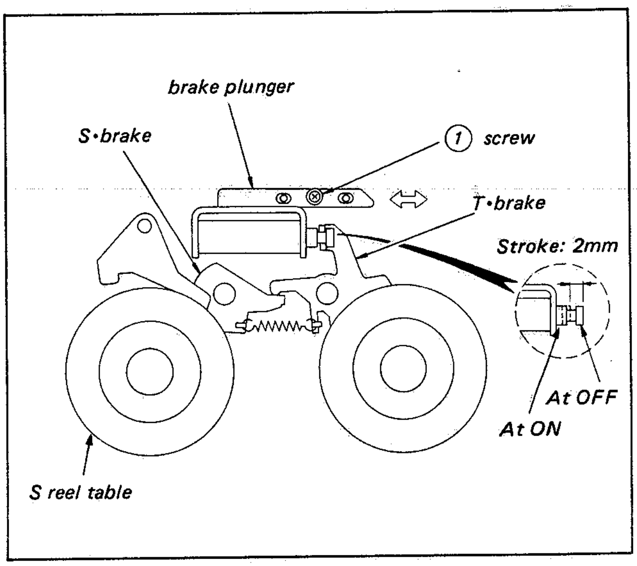

brake plunger
S•brake
① screw
T•brake
Stroke: 2mm
At OFF
At ON
S reel table

Fig. 3-29. Brake Plunger Position Adjustment

3-13. SOFT BRAKE ADJUSTMENT

[Adjustment Method]

1) Place a tension gauge (SL-0011) on the S reel base and hook a sector type gauge as shown in Fig. 3-30.
2) Adjust by moving the tension coil spring ① in the direction of the arrow Ⓐ until the sector type gauge reading is 8 g when the FF mode is set up. (See Fig. 3-31)

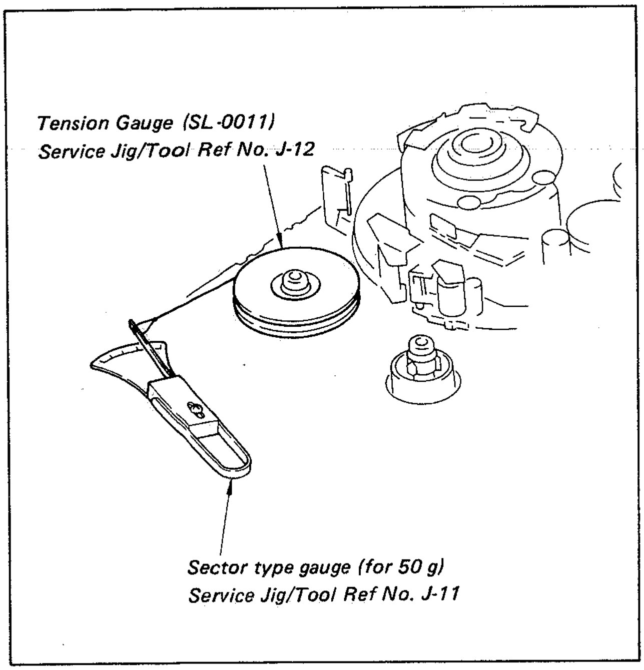

Tension Gauge (SL-0011)
Service Jig/Tool Ref No. J-12
Sector type gauge (for 50 g)
Service Jig/Tool Ref No. J-11

Fig. 3-30. Soft Brake Adjustment-1

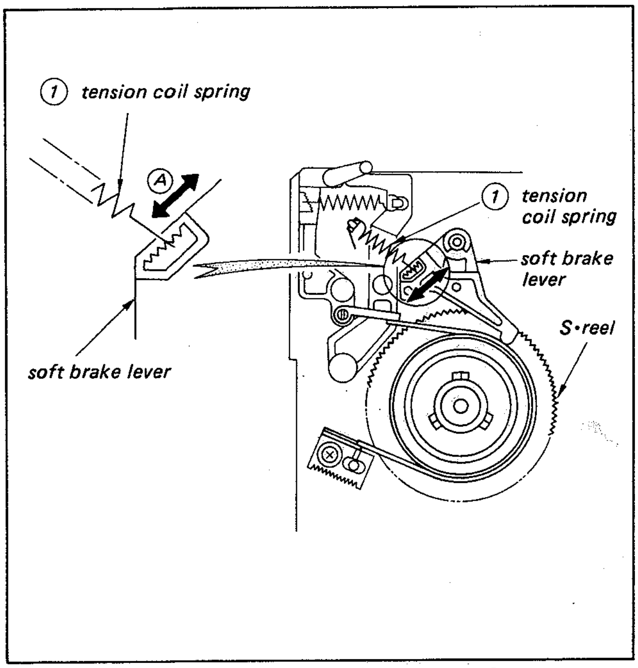

① tension coil spring
Ⓐ
soft brake lever
① tension coil spring
soft brake lever
S•reel

Fig. 3-31. Soft Brake Adjustment-2

3-14. TENSION REGULATOR LEVER POSITION ADJUSTMENT

[Adjustment Method]

1) Set up the PLAY Mode.
2) Loosen the screw ③ and adjust by moving the tension regulator band assembly ④ in the direction of the arrow Ⓐ until the tape guide pin (No. 1 guide) of the tension regulator lever assembly ① is positioned inside the outer circumference of the shuttle guide (2) ② as shown in Fig. 3-32.
3) After making the adjustment, tighten the screw ③ carefully in order not to move the tension regulator band assembly ④.

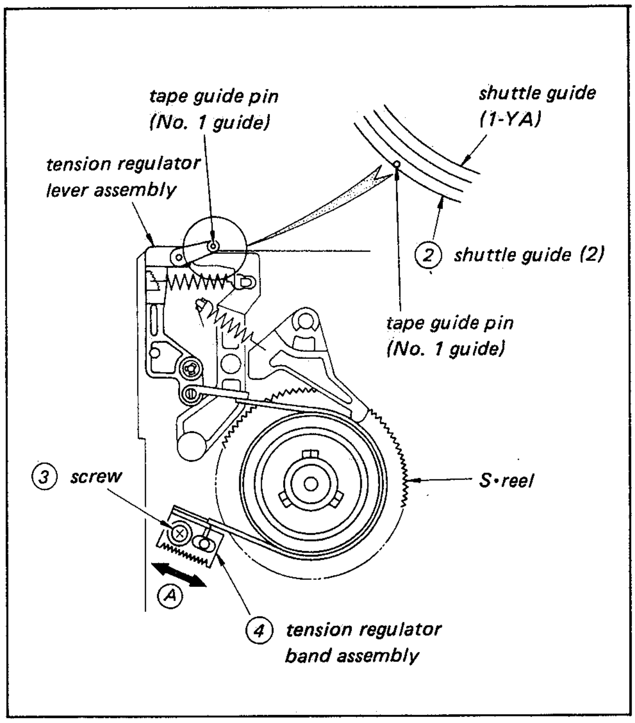

tape guide pin
(No. 1 guide)
shuttle guide
(1-YA)
tension regulator
lever assembly
② shuttle guide (2)
tape guide pin
(No. 1 guide)
③ screw
S•reel
Ⓐ
④ tension regulator
band assembly

Fig. 3-32. Tension Regulator Lever Position Adjustment

3-15. CHECK AND ADJUSTMENT OF MICROSWITCH POSITION

3-15-1. Check and Adjustment of Threading End Switch (TE Switch) Position

[Check Procedure] (Fig. 3-33)

Rotate the S threading ring by hand and check that the TE switch turns on and off with a clicking noise while the lock roller is moving within the upper 2/3 of the straight portion ℓ of the recess Ⓐ in Fig. 3-33 on the ring. If not, adjust as follows.

[Adjustment Procedure]

1) Adjust the lock roller to the position caving from the notch rim tip on the S threading ring, rotate the cam shaft using a blade-tip screwdriver in the direction of the arrow, and secure the cam shaft when the TE switch is turned on (a click tone is audible).
2) Check the results of the adjustment following the check procedure above.

[Removal] (Fig. 3-34)

1) Unhook the tension coil spring from the lock arm assembly.
2) Unscrew screw ① and remove the TE switch subassembly.
3) Push the hook on the main chassis assembly in the direction of the arrow to unhook, and remove the lock arm assembly.

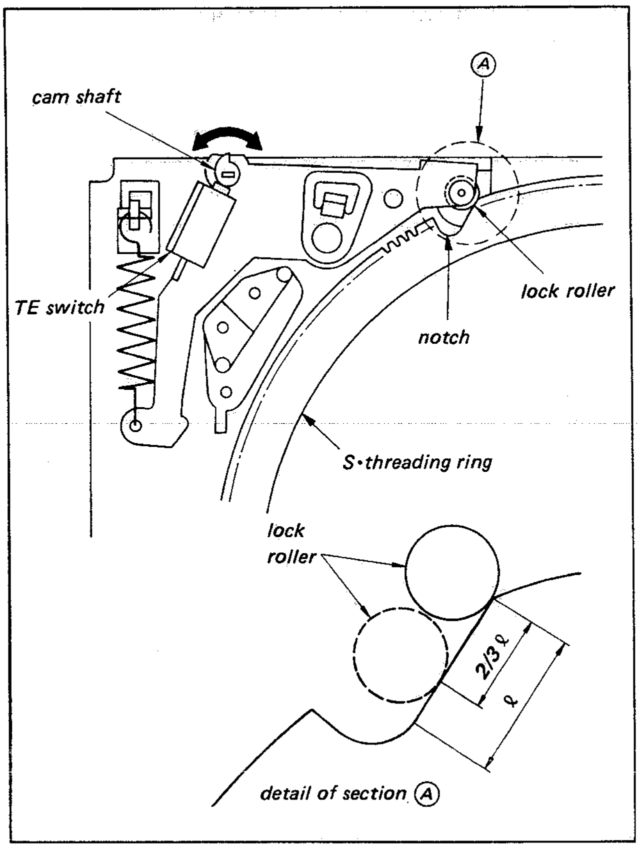

Ⓐ
cam shaft
TE switch
lock roller
notch
S•threading ring
lock roller
2/3ℓ
ℓ
detail of section Ⓐ

Fig. 3-33. TE Switch Position Adjustment

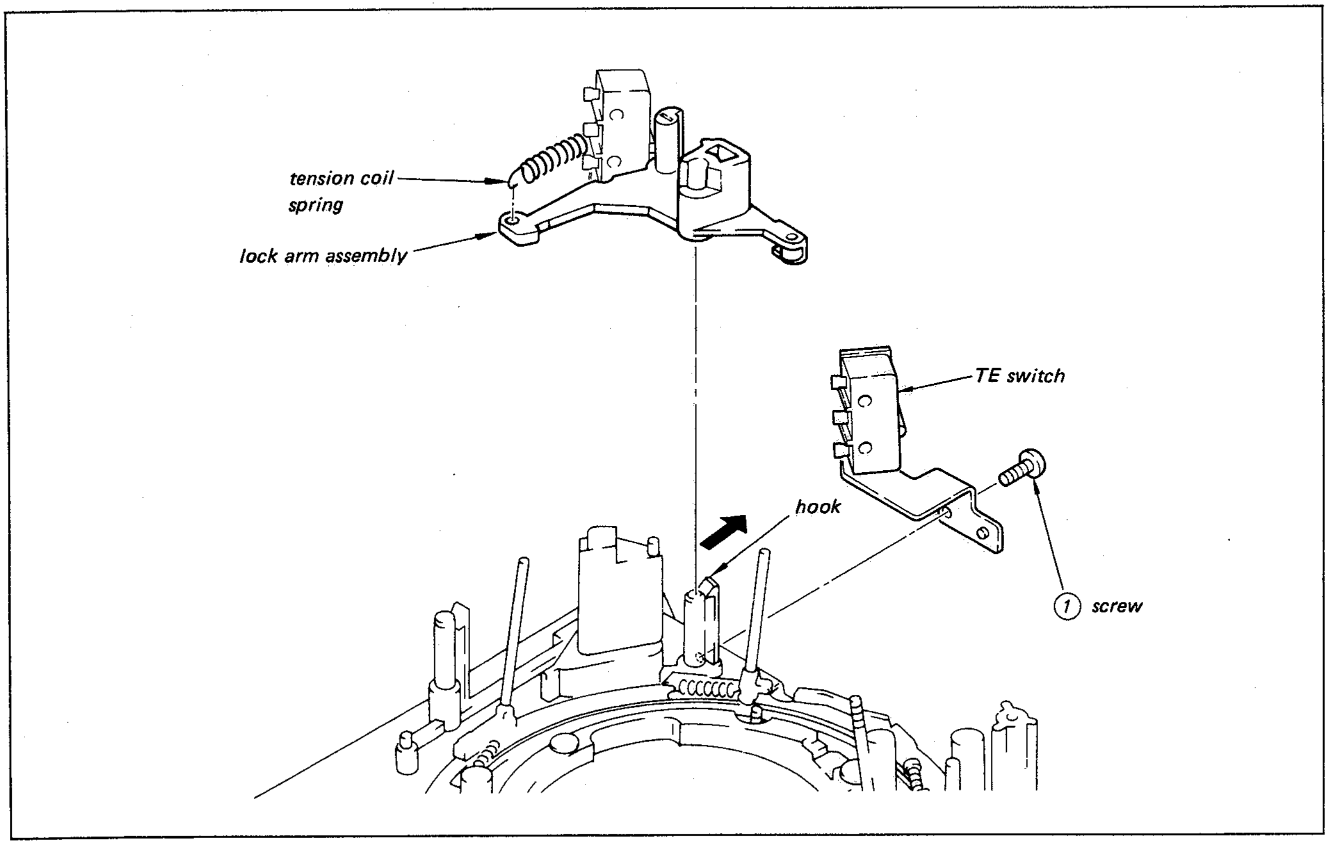

tension coil spring
lock arm assembly
TE switch
hook
① screw

Fig. 3-34. Removing TE Switch and Lock Arm Assembly

3-15-2. Check and Adjustment of Unthreading End Switch (UTE Switch) Position

[Check Procedure]

Rotate the S threading ring by hand. Verify that the switch trips when a pin of $\phi 1.2$ is inserted at section Ⓐ in Fig. 3-35 after the UTE switch arm roller assembly has dripped into the UTE switch cam groove. Verify that the switch does not trip when a pin of $\phi 0.6$ is inserted.

[Adjustment Procedure]

1) If the switch does not trip when the $\phi 1.2$ pin is inserted, loosen small screw ① and adjust by moving in the direction of the arrow little by little.
2) The switch actuator is bent as shown in Fig. 3-36 when the switch turns on after inserting a $\phi 0.6$ pin. Check the adjustment.

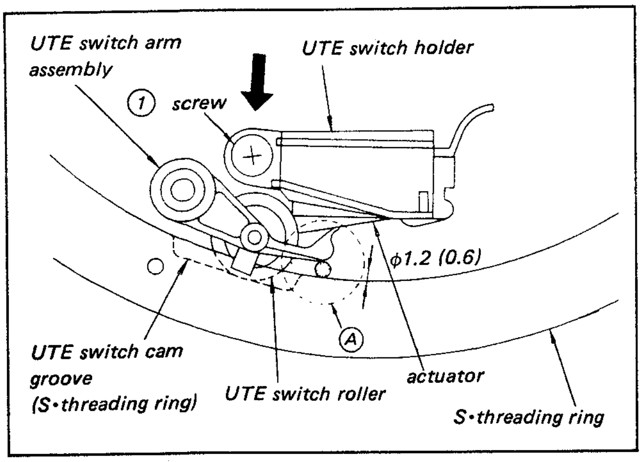

UTE switch arm assembly
① screw
UTE switch holder
ϕ1.2 (0.6)
Ⓐ
UTE switch cam groove (S•threading ring)
UTE switch roller
actuator
S•threading ring

Fig. 3-35. UTE Switch Position Adjustment

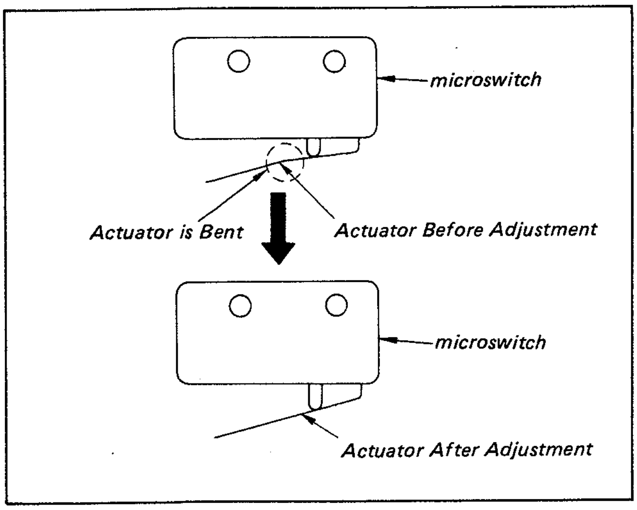

microswitch
Actuator is Bent
Actuator Before Adjustment
microswitch
Actuator After Adjustment

Fig. 3-36. Actuator Adjustment

Caution:

Insert the $\phi 1.2$ and 0.6 pins into their correct positins as shown in Fig. 3-37. (Even when the clearance at the entrance is 1.2 mm on construction, depending on the pin insertion positions as shown in Fig. 3-37, the clearance inside is less than 1.2 mm).

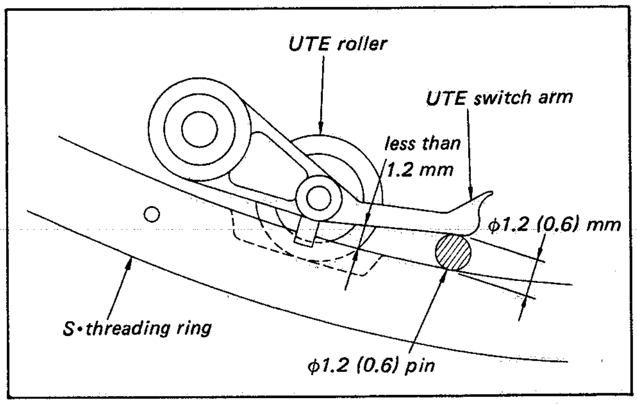

UTE roller
UTE switch arm
less than 1.2 mm
ϕ1.2 (0.6) mm
S•threading ring
ϕ1.2 (0.6) pin

Fig. 3-37. Pin Position During Checking

[Removal]

1) Unscrew screw ① as shown in Fig. 3-38.
2) Release the switch hook ② from the chassis and remove the switch body while pushing the actuator to the "ON" position.

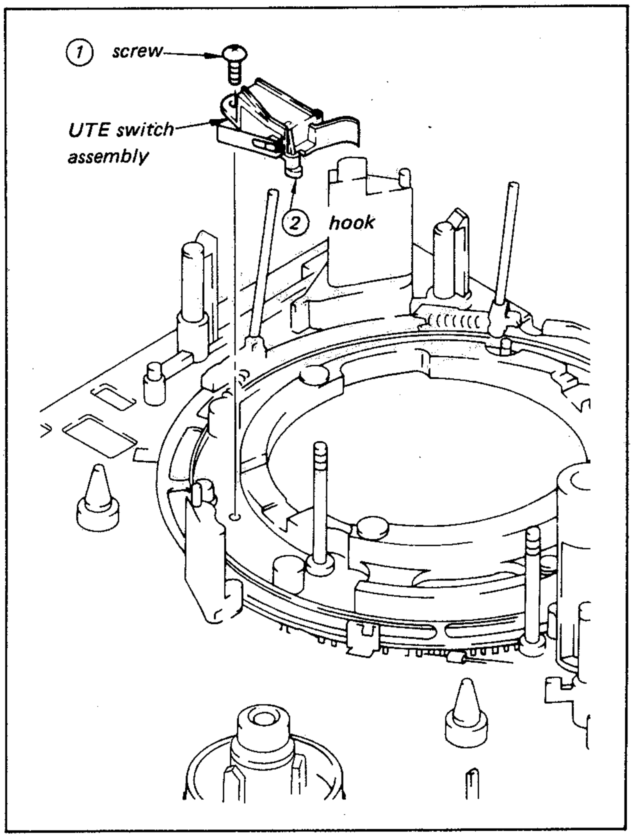

① screw
UTE switch assembly
② hook

Fig. 3-38. Removing UTE Switch

3-16. FORWARD/BACK TENSION MEASUREMENT

Perform this measurement using torque cassette SL-0003C according to the procedure below.

[Procedure]

1) Remove the upper panel so that the tape path is visible.
2) Insert the torque cassette and set PLAY mode.
3) Read the S reel side meter after the indicator has made about one revolution.
   Specified Value 30 ± 5 g • cm

Note:

i) Be sure the set is level when measuring.
ii) After measuring, the tape may go slack if the STOP button is pressed, so put the set into forward mode first, to remove the slack, then the tape can be ejected.

[Adjustment]

Adjust the position of the tension coil spring on the tension regulator lever assembly in the direction of the arrow Ⓐ so that measured values become 30 ± 5 g • cm to conform to the standard.

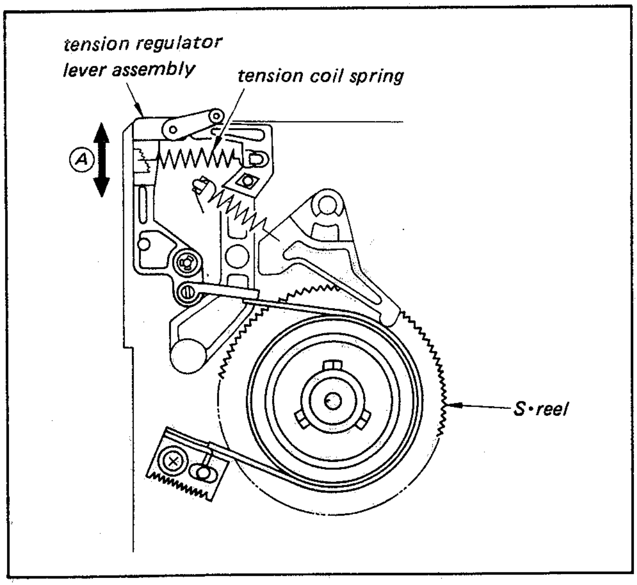


Fig. 3-39. Back Tension Measurement

3-17. FORWARD TORQUE ADJUSTMENT

Perform this measurement using torque cassette SL-0003C according to the procedure below.

[Procedure]

1) Insert the torque cassette and set RECORD mode.
2) Adjust RV309 of SS-16 board so that the reading of the take-up side becomes 80 ± 5 g • cm.

Note:

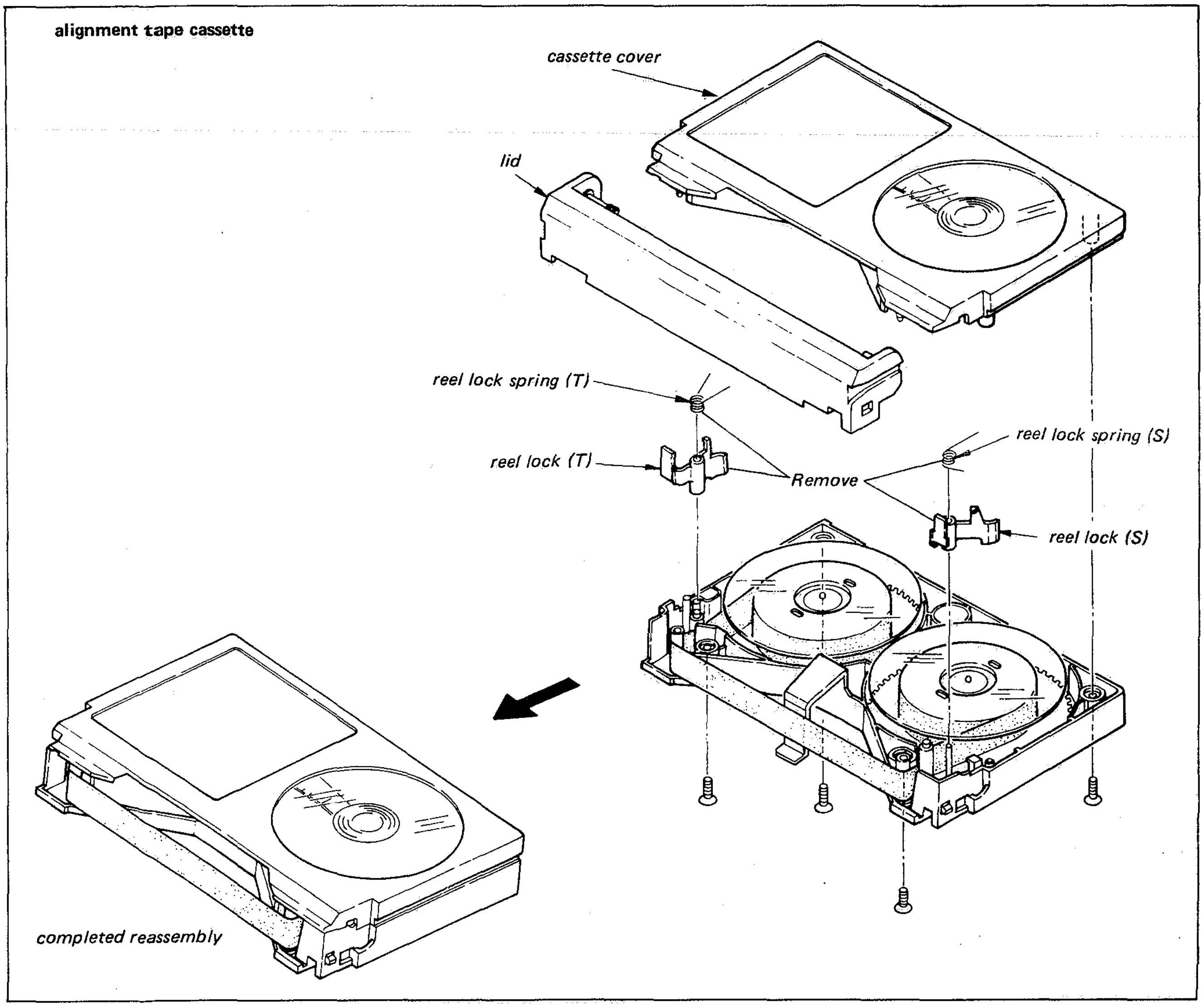
Upon RECORD mode, auto shutoff may occur, entering STOP mode. This is due to the construction of the torque cassette (the action of the built-in spring). The spring acts when the take-up reel table stops momentarily. In this case, either readjust by pushing the REC button, or adjust as follows.

1. Unplug connectors CN310 and 311 from SS-16 board.
2. Connect pin ㊴ of IC301 (TP-402) and pin ② of CN 310 with a 47 kohm resister.
3. Adjust.

SECTION 4
TAPE PATH ADJUSTMENT

4-1. TRACKING ADJUSTMENT

This adjustment has significant effect on picture quality in each mode and tape interchangeability, so please perform it very carefully.

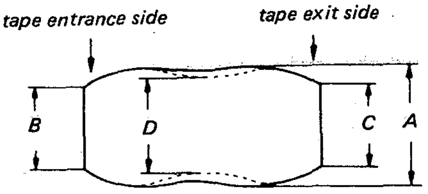


alignment tape cassette
cassette cover
lid
reel lock spring (T)
reel lock (T)
Remove
reel lock spring (S)
reel lock (S)
completed reassembly

Fig. 4-1. Cassette Holder Remodeling

4-1-1. Preparation

1) When modifying alignment tape KR5-2H, use caution not to dislodge the tape reels from their correct position. Refer to Fig. 4-1 and remove the four screws that secure the upper cover to the lower cover.
   Remove the upper cover and lid. Separate the lid and lid tension spring from the upper cover. Remove the two reel lock springs (T and S) and the two reel locks (T and S). Remount only the upper cover, being certain that it is properly mated with the lower cover. Secure the covers with four screws. NOTE — If the reel locks, and related springs are not removed from the cassette, the tape will load but will not thread. In this case the cassette will be ejected from the VCR approximately eight seconds after being loaded into the VCR.
2) Clean the tape contact surfaces (tape guides, drum, capstan shaft, pinch roller, ACE FE head surface) with chamois dampened with methanol.
3) Oscilloscope connections:
   1ch: CN2-5 pin (RY-1 board)
   2ch: CN2-3 pin (RY-1 board)
4) Play back the tracking portion of the modified KR5-2H alignment tape.
5) Confirm that the RF output waveform is flat, with maximum amplitude. (The waveform should increase and decrease, remaining flat, when the tracking control knob is turned back and forth.) Also, when the waveform is maximum, confirm that the RF output waveform variation and contact satisfy the specifications shown in Fig. 4-2. If they do not, follow the instructions in 6).
6) If the tracking control knob is turned and the entrance waveform does not flatten as shown in Fig. 4-3(a), perform the entrance side adjustment in 4-1-2. If the exit waveform does not flatten as shown in Fig. 4-3(b), perform the exit side adjustment in 4-1-3.


tape entrance side
tape exit side
B
D
C
A

Specifications: Tracking Control Knob at Maximum

contact: $\frac{B}{A} \geqq 0.7$

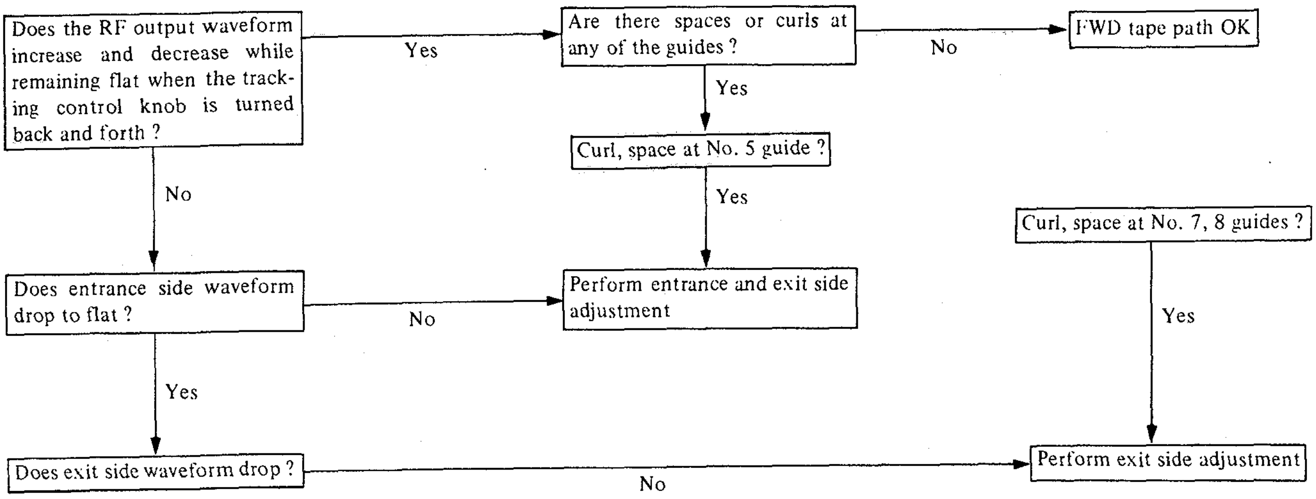
$\frac{C}{A} \geqq 0.7$

Variation: $\frac{D}{A} \geqq 0.9$

Fig. 4-2.

	BOARD	CONNECTOR & PIN NO.
RF Output Waveform	RY-1	CN2-5
External Trigger	RY-1	CN2-3
Audio Out	AM-3	CN501-1
Video Out	YC-25	VIDEO OUT

Waveform Confirmation


Does the RF output waveform increase and decrease while remaining flat when the tracking control knob is turned back and forth ?
Yes
Are there spaces or curls at any of the guides ?
No
FWD tape path OK
Yes
Curl, space at No. 5 guide ?
No
Yes
Curl, space at No. 7, 8 guides ?
Does entrance side waveform drop to flat ?
No
Perform entrance and exit side adjustment
Yes
Yes
Does exit side waveform drop ?
No
Perform exit side adjustment

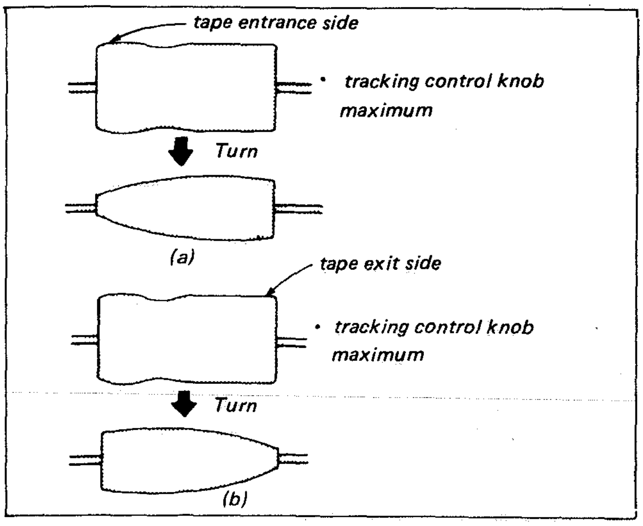

tape entrance side
• tracking control knob maximum
Turn
(a)
tape exit side
• tracking control knob maximum
Turn
(b)

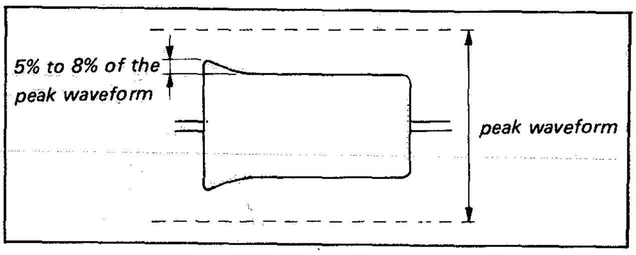
Fig. 4-3.

Note: After the indicated tape path adjustments that follow have been successfully completed using normal playback speed, operate the VCR in the Speed Search mode and look for curl at the tape guides. Readjust them if necessary. Then, finally, playback a regulator L830 tape as a check-up. See Section 4-4.

4-1-2. Entrance Side Adjustment

Always perform the exit side adjustment as well as the entrance side adjustment. Fig. 4-4 illustrates the guides and adjustment locations.

1) Turn tracking control knob counterclockwise to drop RF output waveform to about 60% of maximum.
2) Turn No. 6 guide counterclockwise to free tape transportation to the drum. Use a special notched screwdriver. (See Section 1-8, Tools And Fixtures Required)
3) Loosen No. 5 guide lock screw ①, turn No. 5 guide so that the entrance side waveform is almost flat, as shown in the figure below, and tighten lock screw ①. (See Fig. 4-5)

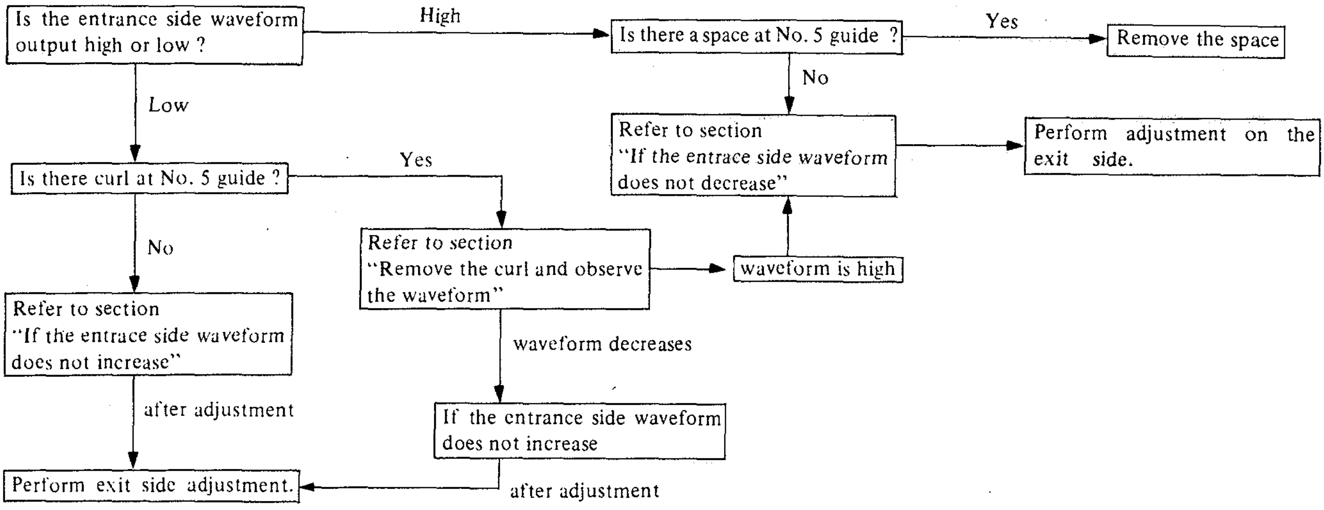

5% to 8% of the peak waveform
peak waveform

Note:
Be sure that the waveform remains as shown in the figure after tightening the lock screw ①.

4) Next lower No. 6 guide and flatten the waveform.
5) Push the tape down between No. 4 and No. 5 guides by hand, and confirm that the entrance side RF waveform returns to the original state after being lowered. If the waveform is not as illustrated, or if the waveform does not flatten, or takes too much time to flatten after the entrance side tape is pushed down, follow the procedure below to adjust.
6) Check No. 5 guide for space and curl. If space or curl exists, follow the appropriate adjustment procedure.

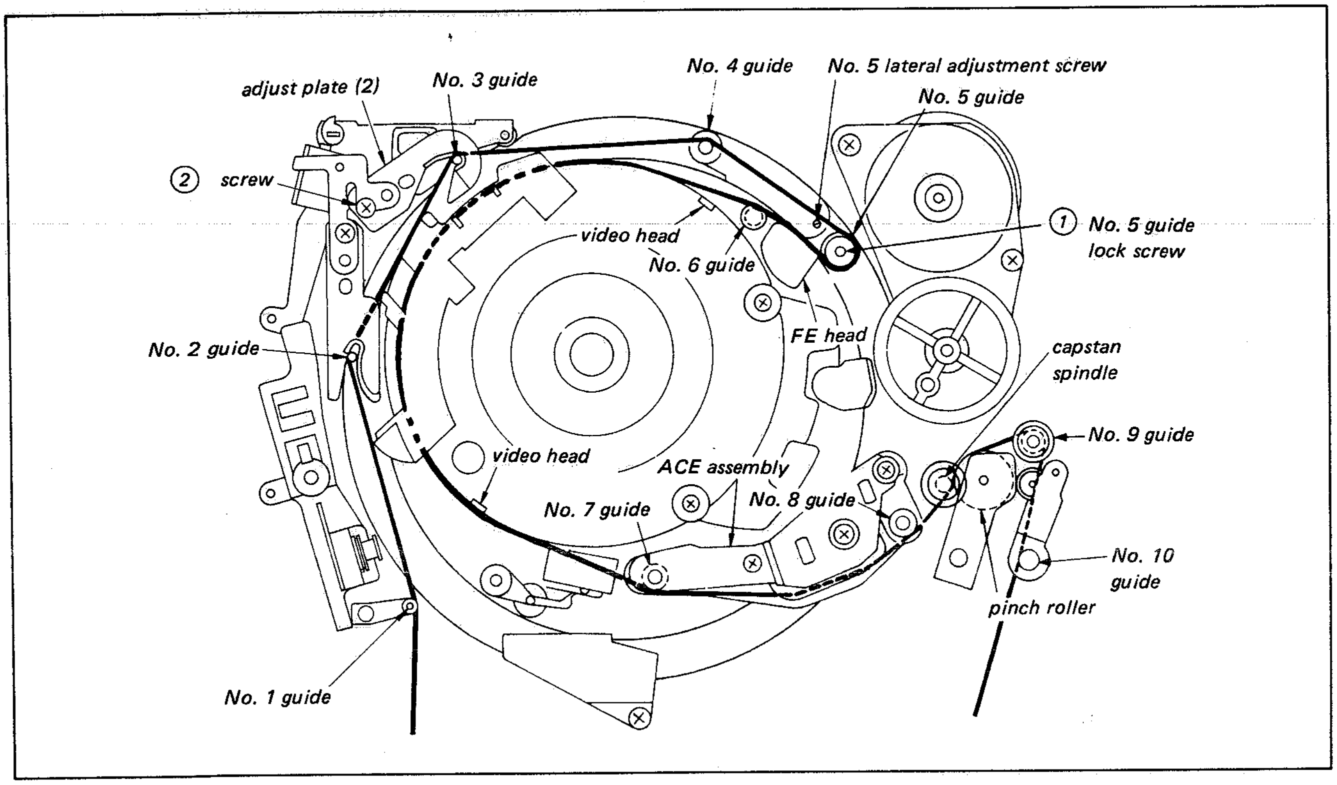
   Note:
   Be sure that there is tape tension upper and lower balance between No. 3 — No. 4 — No. 5 guides. Perform No. 3 or No. 5 guide lateral adjustment if necessary.

Entrance Side Flow Chart


Is the entrance side waveform output high or low ?
High
Is there a space at No. 5 guide ?
Yes
Remove the space
No
Refer to section "If the entrace side waveform does not decrease"
Perform adjustment on the exit side.
Low
Is there curl at No. 5 guide ?
Yes
Refer to section "Remove the curl and observe the waveform"
waveform is high
No
Refer to section "If the entrace side waveform does not increase"
waveform decreases
after adjustment
If the entrance side waveform does not increase
Perform exit side adjustment.
after adjustment

Note:

Upon failing to obtain the waveforms shown above, press down the tape at the entrance side, adjust as indicated below when a long time is needed for the waveform to return to the horizontal, or when it does not return at all.



adjust plate (2)
No. 3 guide
No. 4 guide
No. 5 lateral adjustment screw
No. 5 guide
② screw
video head
No. 6 guide
① No. 5 guide lock screw
No. 2 guide
FE head
capstan spindle
No. 9 guide
video head
ACE assembly
No. 7 guide
No. 8 guide
No. 10 guide
pinch roller
No. 1 guide

Fig. 4-4. Tape Guide Layout

[If the waveform entrance output does not increase]

1) Check to make sure tape upper and lower tension is equal between No. 3 — No. 4 — No. 5 guides. If it is not, perform No. 3 or No. 5 guide lateral adjustment.

   Note:
   Be sure there is no space at No. 4 guide lower flange.

2) Raise No. 4 guide lower flange to raise entrance output.

   Note:
   No. 4 guide lower flange may be raised 0.4 mm from its lowest position.

3) If the waveform does not increase in step 2), turn No. 5 lateral adjustment screw slightly (less then 360°) counterclockwise.

[If the waveform entrance output does not decrease]

1) Move the No. 3 guide adjust plate away from the drum, and tighten screw ② at the point just before the lower tension of the tape loosens.
2) If the tape is touching No. 4 guide lower flange, lower the flange. If it is floating, adjust No. 5 guide laterally.

[If there is space at No. 5 guide]

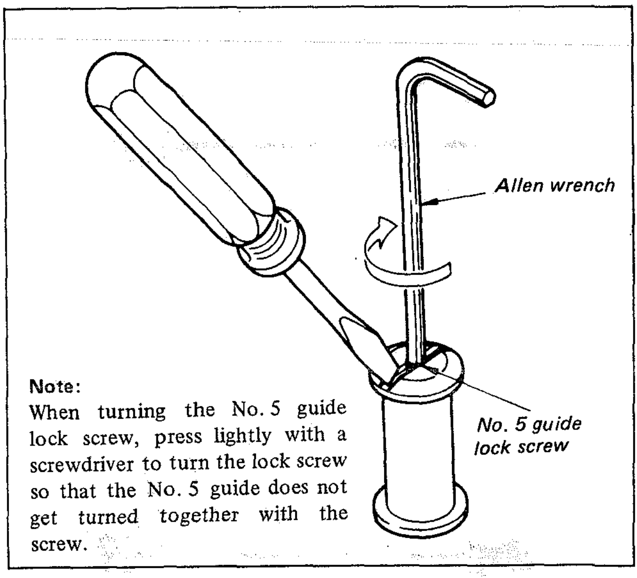
Turn No. 4 guide conterclockwise to raise the tape and remove the space at No. 5 guide.

Note:

Be careful not to create a large space at the bottom of No. 4 guide.

[If there is curl]

1) When there is a space at the bottom of No. 4 guide: Lean the adjust plate of No. 3 guide toward the outside until the point just before the lower tape tension loosens.
2) When there is curl but no space at the bottom of No. 4 guide:
   i) Confirm that No. 4 guide is not raised too high. Turn clockwise to lower if necessary.
   ii) If this does not slove the problem, tighten No. 5 guide lateral adjustment screw by turning clockwise until the curl disappears.



Note:
When turning the No. 5 guide lock screw, press lightly with a screwdriver to turn the lock screw so that the No. 5 guide does not get turned together with the screw.

Fig. 4-5.

4-1-3. Exit Side Adjustment

1) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
2) Raise No. 7, 8 guides to free the tape transportation, and check the waveform. (This waveform is called "exit free waveform".)

Note:
Be careful not to raise the guides too much. They should be raised about 0.3 mm, and also, the tape should not touch the ACE head bottom flange. (Fig. 4-6)

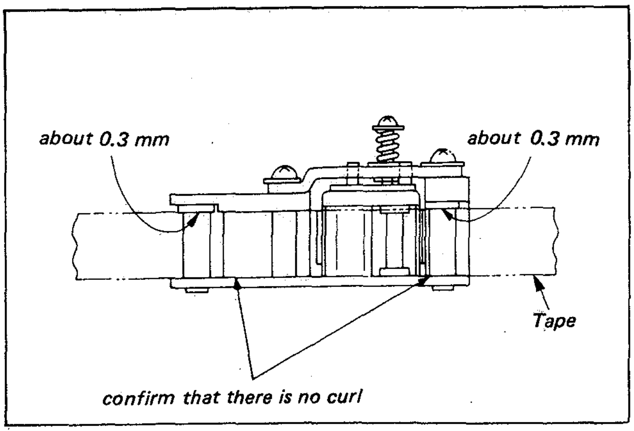


Fig. 4-6.

i) If the exit free waveform is within the range illustrated in Fig. 4-7(a), (b), proceed with exit side adjustment.
ii) If it is not within the specified range, follow the adjustment procedure in 4-3.

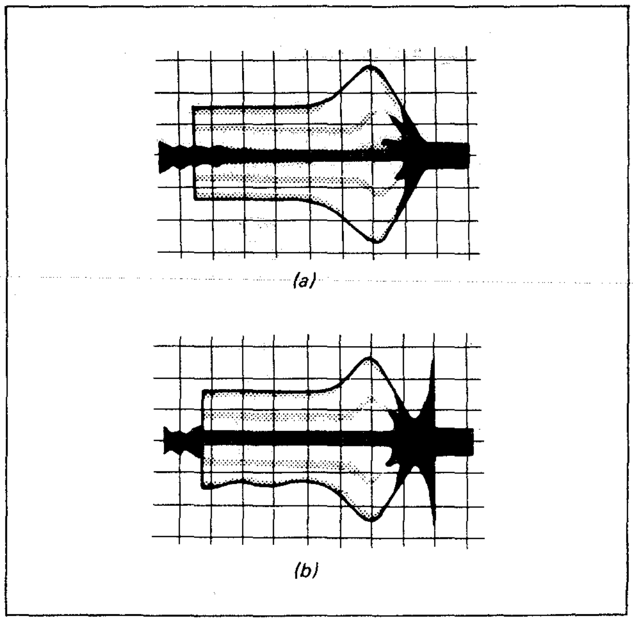


Fig. 4-7.

3) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. (Lower the guide to the point just before the waveform changes, and where there is no curl.) At this time, the exit side waveform may rise slightly, so lower No. 7 guide again to flatten it, and match No. 8 guide to the tape.
4) Confirm that there is no curl at No. 7, 8 guides in forward mode.
5) Confrim that curl and space do not appear at No. 8 guide in reverse mode. If curl or space appears, adjust with No. 9 guide.

4-2. ADJUSTMENT AFTER REPLACEMENT OF THE ACE ASSEMBLY

Perform the following adjustments after removing or replacing the ACE assembly.

4-2-1. Tracking Adjustment

1) Position the parallel plate (Fixture, SL-0657) at shown in Fig. 4-8, and turn audio head lateral adjustment screw ① to adjust the audio head vertically.

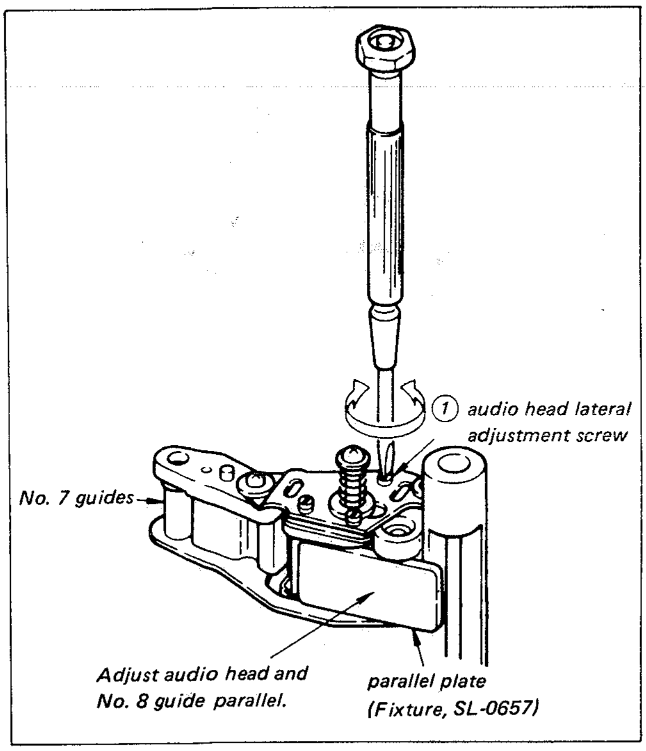

① audio head lateral adjustment screw
No. 7 guides
Adjust audio head and No. 8 guide parallel.
parallel plate (Fixture, SL-0657)

Fig. 4-8.

2) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
3) Play back the tracking portion of the alignment tape KR5-2H, raise No. 7, 8 guides about 0.3 mm, and check the exit free waveform of the RF output waveform.

   Note:
   Be sure that the tape does not touch the bottom flange of the ACE assembly.

   i) If the waveform is within the range illustrated in Fig. 4-7(a), (b), proceed with the adjustment.
   ii) If the exit free waveform appears as shown in Fig. 4-9, turn the ACE lateral adjustment screw clockwise until the waveform is within the range illustrated in Fig. 4-7(a), (b).
   iii) If the exit free waveform appears as shown in Fig. 4-10, turn the ACE lateral adjustment screw counter-clockwise to obtain the waveform shown in Fig. 4-9, then turn clockwise again until the waveform is within the range shown in Fig. 4-7.

4) Turn the No. 7 guide to flatten the waveform, and match the No. 8 guide to the tape. (Lower the guide until the point just before curl appears at No. 8 guide flange.)
5) If the RF output waveform is as shown in Fig. 4-9, where the exit side is not flat, lower No. 7, No. 8 guides again to flatten it.

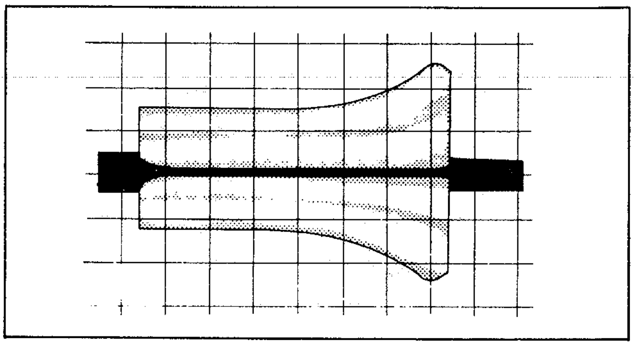


Fig. 4-9.

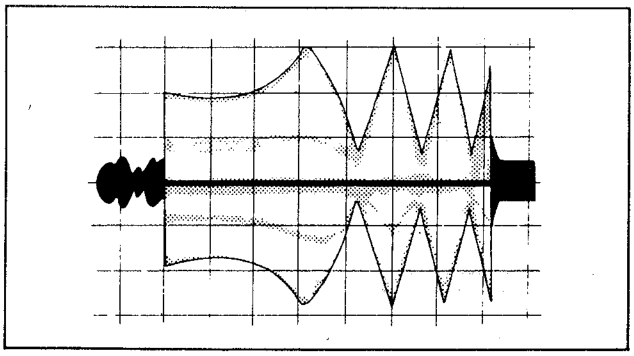


Fig. 4-10.

4-2-2. Audio Head (ACE Assembly) Azimuth Adjustment

1) Connect the oscilloscope as follows:
   CN501 . . . . . 1 pin (AM-3 board)
   Play back the 5 kHz portion of the alignment tape.
2) Turn the azimuth adjustment screw (Fig. 4-11) so that the amplitude of the 5 kHz waveform is maximum.

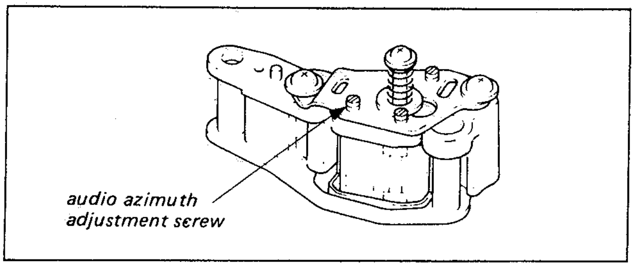


Fig. 4-11.

4-2-3. CTL Head (ACE Assembly) Position Adjustment

This adjustment is both mechanical and electric: mechanically, it is the adjustment of the CTL head position, and electrically, it is the tracking control center adjustment. The procedure involves performing the electrical adjustment first, then the head position adjustment.

1) Connect the oscilloscope as follows:
   1ch: CN2 . . . . . . 5 pin (RY-1 board)
   2ch: CN501 . . . . 1 pin (AM-3 board)
   External trigger: CN2 . . . . . . 3 pin (RY-1 board)
2) Play back the tracking portion of the alignment tape.
3) Turn the tracking control knob back and forth, and confirm that the output waveform level is maximum at the center click position, and that the 0 level of the audio signal is at the point where the RF output waveform Bch waveform appears, as shown in Fig. 4-12.
   If adjustment is necessary, proceed as follows.

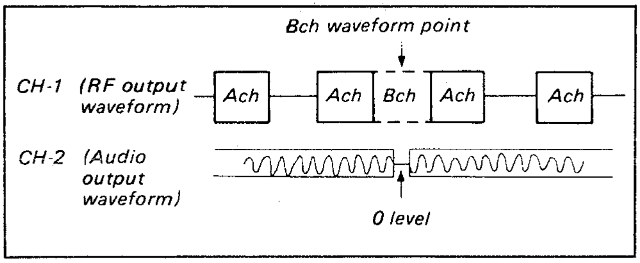


Fig. 4-12.

4) Tracking Control Center Adjustment
5) CTL Head Position Adjustment
   Set the tracking control knob at the center detent position and loosen the two ACE assembly position adjustment screws ①. As shown in Fig. 4-13 slide the ACE assembly with a screwdriver until it is in the position shown in Fig. 4-12 and the RF output waveform is maximum. Tighten the screws ① when this position is obtained.
6) Replay the color bars of the alignment tape and check the picture quality.

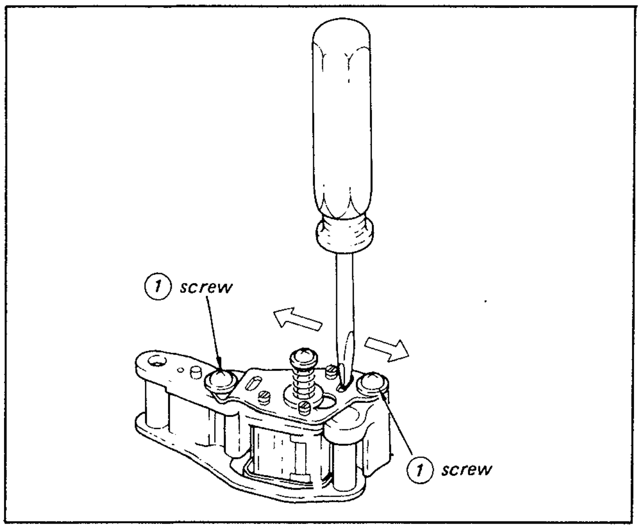


Fig. 4-13.

4-2-4. Audio Head (ACE Assembly) Height Adjustment

Perform this adjustment only after completing the exit side tracking adjustment.

1) Oscilloscope connection:
   1ch: CN501 . . . . 1 pin (AM-3 board)
   Replay the 5 kHz portion of the alignment tape.
2) Turn the audio head height adjustment screw ① and the lateral adjustment screw ② (Fig. 4-14) until the audio output waveform amplitude is maximum.

   Note:
   Both of these adjustment screws should be turned in the same direction at the same angle, less then 30°.

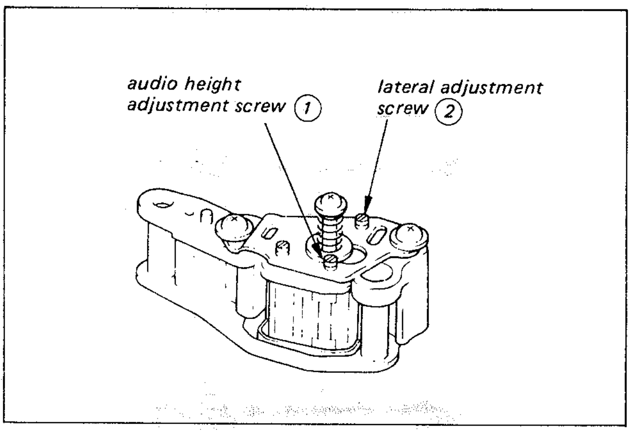
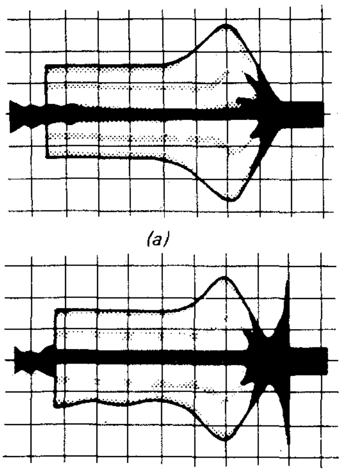


Fig. 4-14.

4-3. ADJUSTMENT AFTER REPLACEMENT OF THE CAPSTAN MOTOR

1) Perform the vertical adjustment of the capstan shaft according to 3-4. Replacement and Adjustment of Capstan Motor.
2) Play back the tracking portion of the alignment tape. Connect the oscilloscope as follows:
   1ch: CN2 . . . . . . 5 pin (RY-1 board)
   2ch: CN2 . . . . . . 3 pin (RY-1 board)
3) Turn the tracking control knob clockwise to lower the RF output waveform to about 60% of the maximum.
4) Raise No. 7, 8 guides a little, and check the exit free waveform.
   i) If the exit free waveform is within the range indicated in Fig. 4-15(a), (b), proceed from step 5).


(a)

(b)

Fig. 4-15

   ii) If the peak of the exit free waveform is smaller than that illustrated in Fig. 4-15(a) (e.g. Fig. 4-16), loosen the lock screw, then turn the capstan adjustment screw until the waveform is within the specified range.

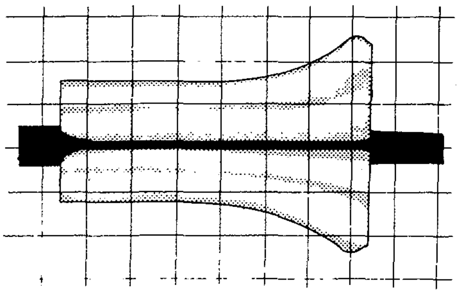


Fig. 4-16

   iii) If the peak shape of the exit free waveform differs from that shown in Fig. 4-15(b) (e.g. Fig. 4-17), loosen the lock screw, then turn the capstan adjustment screw clockwise until the waveform is within the specified range.

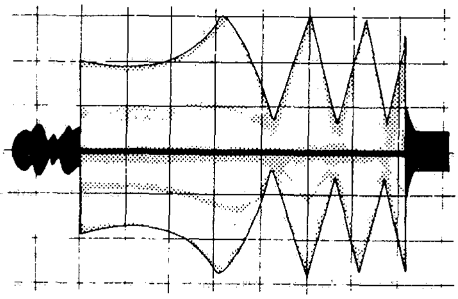


Fig. 4-17

Note:
After turning the capstan adjustment screw, wait until the waveform stabilizes (about 10 — 15 seconds) before continuing with the adjustment.

5) Lock the capstan lock screw. (Turn clockwise until is stops, then turn about 30° more. At this point, the exit free waveform will change slightly, and if it goes out of the range shown in Fig. 4-15(a), (b) return to step 4) and re-adjust.
6) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. If the exit waveform rises, flatten it again with No. 7 guide and match No. 8 guide to the tape again.
7) Confirm and adjust according to 4-1-3, exit side adjustment procedure items 4), 5).

Note:
Check with L830 tape.

4-4. THIN TAPE MOVEMENT CHECK METHOD DURING TAPE PATH ADJUSTMENT

After confirming the tape path by using the procedures of section 4-1 through 4-3, check the thin tape movement by the procedure given below.

1) Prepare one reel of the commercial L-830. Remove the cassette lid with reference to Fig. 4-1.

2) Run L-830 prepared in the procedure 1 in the PLAY mode and check the following points;

   i) Entrance Side
   Check if the tape bends and is damaged on the No. 4 guide bottom flange, the No. 5 guide top flange and the No. 6 guide top flange. (The curl of the tape is allowed), but the bend of the tape is not allowed.) (Fig. 4-18)

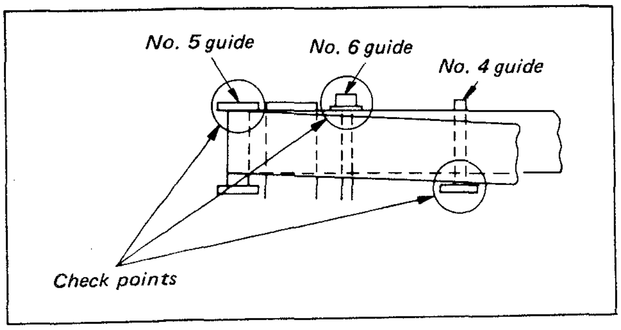


Fig. 4-18.

   ii) Exit side
   Check if the tape bends and is damaged on the No. 7 guide top flange, the No. 8 guide top flange and the No. 10 guide top and bottom flanges. (The curl of the tape is allowed, but the bend of the tape is not allowed.) (Fig. 4-19)

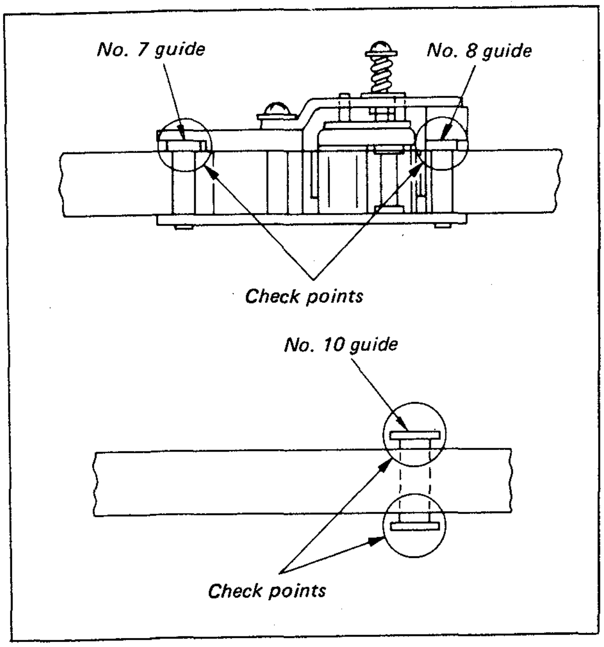


Fig. 4-19.

3) If the tape did not run normally in step 2, readjust the tape path by using KR5-2H.

   a) The tape did not run normally on the entrance side, refer to 4-1-2.

   b) The tape did not run normally on the exit side, refer to 4-1-3.

SECTION 5
ELECTRICAL ALIGNMENT

All the electrical alignment can be performed by using the equipment mentioned below, the alignment tape, and the PAL colour bar signal (100%).

[Equipment Required]

(1) PAL Colour Monitor TV
(2) Oscilloscope, Dual-trace, Bandwidth ... more than 10 MHz with delay mode
(3) Frequency Counter
(4) PAL Colour-Bar Generator
(5) Digital voltmeter
(6) VOM (20 kΩ/V)
(7) Audio Signal Generator
(8) Audio level meter (VTVM)
(9) Attenuator
(10) Alignment Tape, type: KR5-2H, Code No. 8-969-995-52
(11) Alignment Tool (Adjusting screwdriver for semi-fixed resistors and coils)
Jig No. SL-0001, Code No. J-6080-001-A

[Setup for Alignment]

The antenna should be connected correctly to the antenna input terminal of the videocassette recorder.

It is important that the video output signal satisfies the specification because the telecast signal received by the incorporated tuner of the videocassette recorder is utilized as the adjustment signal of the machine. The incorporated tuner should be set to the channel with the best reception. The video signal should be checked with an oscilloscope connected to VIDEO OUT (BNC connector). Verify that the sync signal amplitude is approx. 0.3 Vp-p and the video signal amplitude is approx. 0.7 Vp-p at peak. Adjust the fine tuning while observing the signal and the TV screen so that the burst signal amplitude becomes approx. 0.3V ± 0.1 Vp-p. Also confirm that there is not spikes observed at the sync signal portion. (See Fig. 5-1.)

The video (colour bar) signal for the alignment is shown in Fig. 5-1.

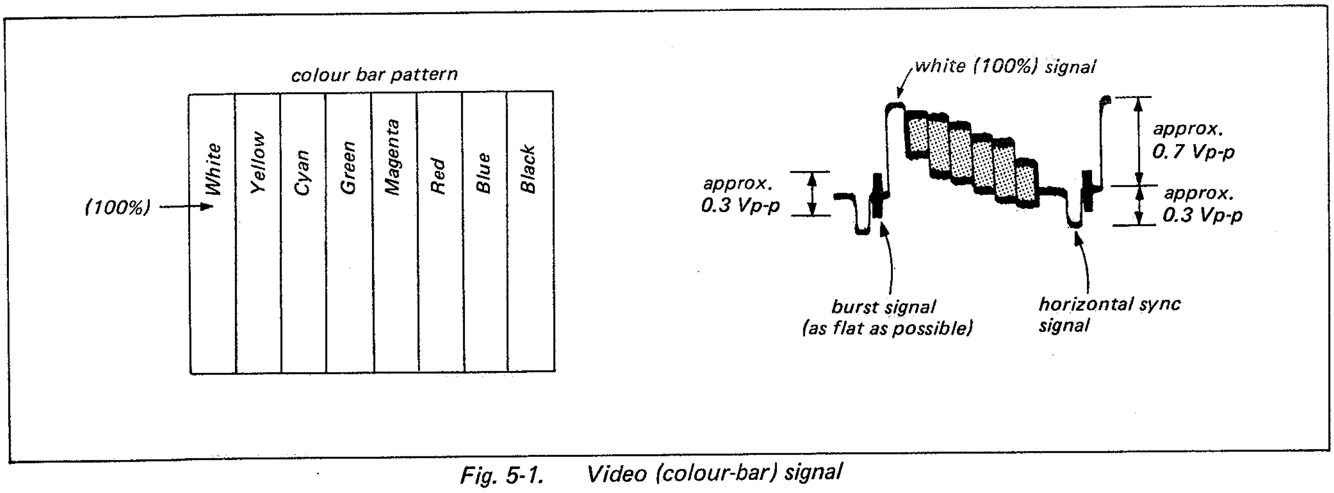


Fig. 5-1. Video (colour-bar) signal

[Alignment Tape]

KR5-2H

	Video signal	Audio signal	Playing time	Use for
1.	Colour bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-B) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check (Check if *1 and *2 are the same position.)

[Alignment Tool for Semi-fixed Variable Resistors and Coils]
Semi-fixed variable resistors and inductances should be adjusted with the alignment tool exclusively prepared for the adjustment of the components. A common screwdriver is too large for adjusting the components from the conductor side of a printed circuit board.

The metal blade of the alignment tool is used for variable resistors and trimmer capacitors and the plastic tip is used for variable inductances.

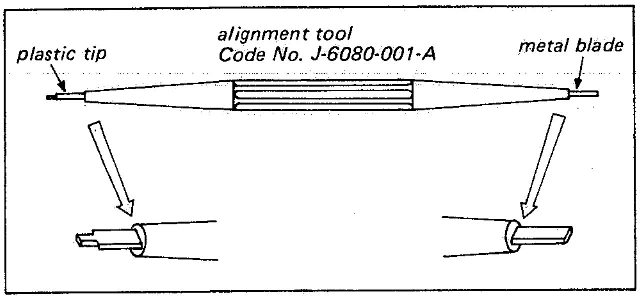

plastic tip
alignment tool
Code No. J-6080-001-A
metal blade

Fig. 5-2. Alignment tool

[Required levels and Impedances of Input and Output]

Video

Input VIDEO IN: BNC connector
$1\,\text{Vp-p}\ ^{+1.0}_{-0.5}\ \text{Vp-p}$
75Ω unbalanced, sync negative
VIDEO OUT: BNC connector
1 Vp-p ± 0.1 Vp-p
75Ω unbalanced, sync negative

Audio

Input AUDIO IN: phono jack
47 kΩ, −10 dBs
(0 dBs = 0.775V rms)
Output AUDIO OUT: phono jack
Load impedance less than 10 kΩ
−10 dBs with 47 kΩ load unbalanced

[Colour Bar Signal]
The 100% colour bar signal recorded on the Alignment tape is shown in Fig. 5-3.

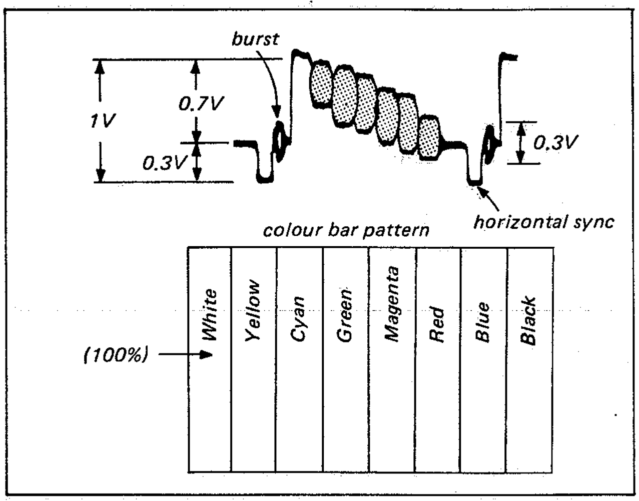
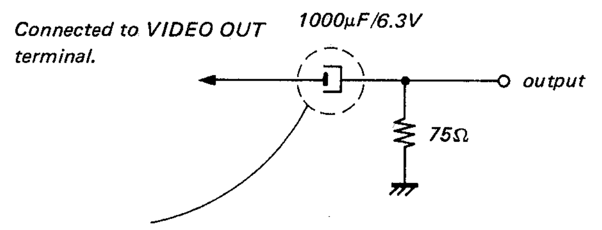

burst
1V
0.7V
0.3V
0.3V
horizontal sync
colour bar pattern
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

Fig. 5-3. Colour bar signal recorded on the alignment tape

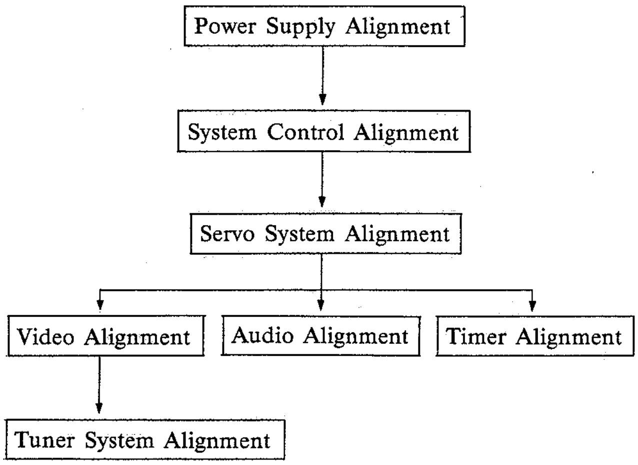
[75Ω Terminating Method]
To terminate the video output terminal follow the steps shown in Fig. 5-4.


Connected to VIDEO OUT terminal.
1000μF/6.3V
output
75Ω

Note: *The machine may be damaged if it is terminated in 75Ω before cutting the DC component.*

Fig. 5-4. 75Ω terminating circuit

[Adjustment procedure]
Adjust in the order given below.


Power Supply Alignment
System Control Alignment
Servo System Alignment
Video Alignment
Audio Alignment
Timer Alignment
Tuner System Alignment

5-1. POWER SUPPLY (SR-17) ADJUSTMENT

Measure in E-E mode (power supply switch ON).

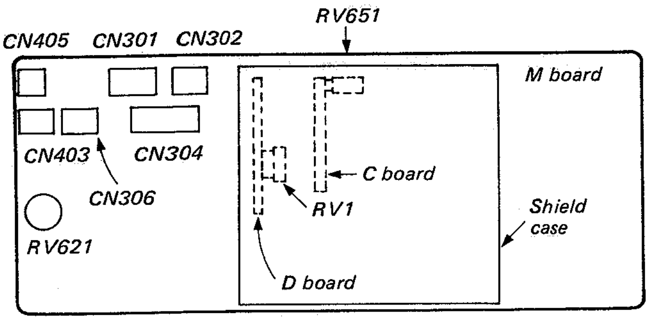

RV651
CN405
CN301
CN302
M board
CN403
CN304
CN306
RV621
C board
RV1
Shield case
D board

Fig. 5-5. Component layout

1. Switched 12V Adjustment
   1) Connect the digital voltmeter to pin ③ of CN301.
   2) Adjust to 12.2 ± 0.2V with RV651.
2. Switched 9V Adjustment
   1) Connect the digital voltmeter to pin ① of CN306.
   2) Adjust to 9.0 ± 0.2V with RV621.
3. Switched 5V Check
   1) Pin ① of CN301 shall be 5.2 ± 0.5V.
4. Unswitched 42V Adjustment
   1) Connect the digital voltmeter to pin ② of CN302.
   2) Adjust to 42 ± 3V with RV1.

5-2. SYSTEM CONTROL CHECK (SS-16 Board)

1. Clock Frequency Check

Mode: E-E
Signal: None
Frequency counter: Pin ㉖ of IC601 (TP601)
Check: f: 4 MHz

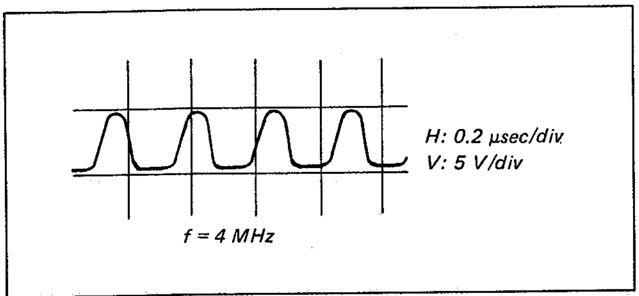

H: 0.2 μsec/div
V: 5 V/div
f = 4 MHz

Fig. 5-6. System control check

5-3. SERVO SYSTEM ALIGNMENT

Alignment Sequence

1. Drum servo system alignment
2. Capstan servo system alignment

5-3-1. Drum Servo System Alignment

1) Drum Free Speed Adjustment (SS-16 Board)

Mode: Playback
Signal: Alignment tape colour bar, or monoscope
Oscilloscope: CH-1 TP405 (Pin ⑬ of IC301)
CH-2 TP402 (Pin ㊴ of IC301)

[Alignment method]

Adjust to 553 μsec ± 10 μsec with RV303. (See Fig. 5-7.)

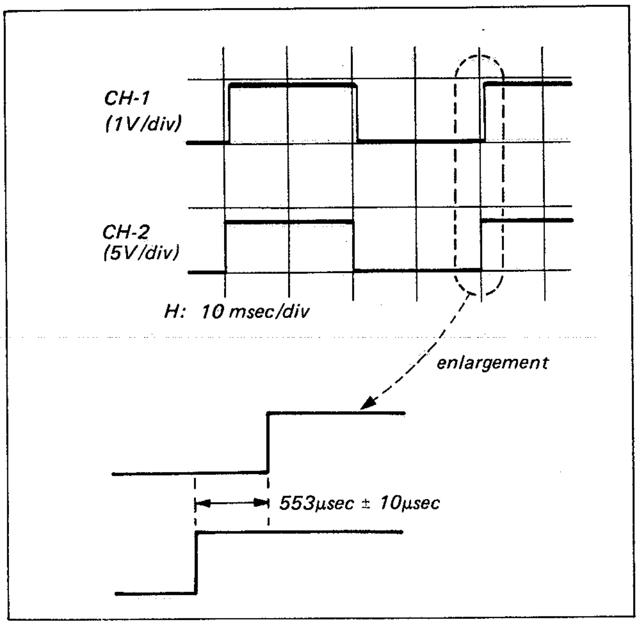

CH-1
(1V/div)
CH-2
(5V/div)
H: 10 msec/div
enlargement
553μsec ± 10μsec

Fig. 5-7. Drum free speed adjustment

2) RF Switching Position Adjustment (SS-16 Board)

Mode: Playback
Signal: Alignment tape colour bar or monoscope
Oscilloscope: CH-1 TP402 (Pin ㊴ of IC301)
CH-2 Pin ㊵ of IC301

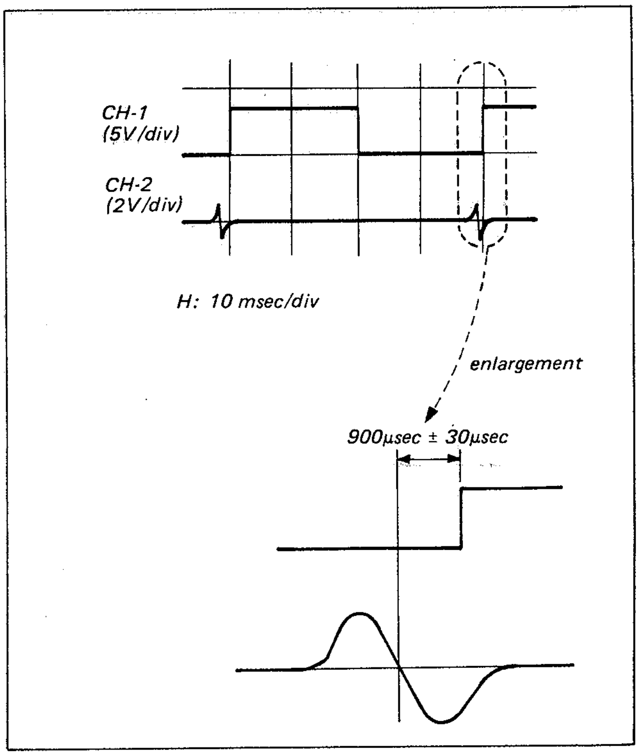

CH-1
(5V/div)
CH-2
(2V/div)
H: 10 msec/div
enlargement
900μsec ± 30μsec

Fig. 5-8. RF switching position adjustment (1)

[Adjustment method]

i) Adjust to 900 µsec ± 30 µsec with RV302. (See Fig. 5-8.)
ii) Change connection of CH-2 only to Pin ㉜ of IC301.
iii) Adjust to 900 µsec ± 30 µsec with RV301. (See Fig. 5-9.)

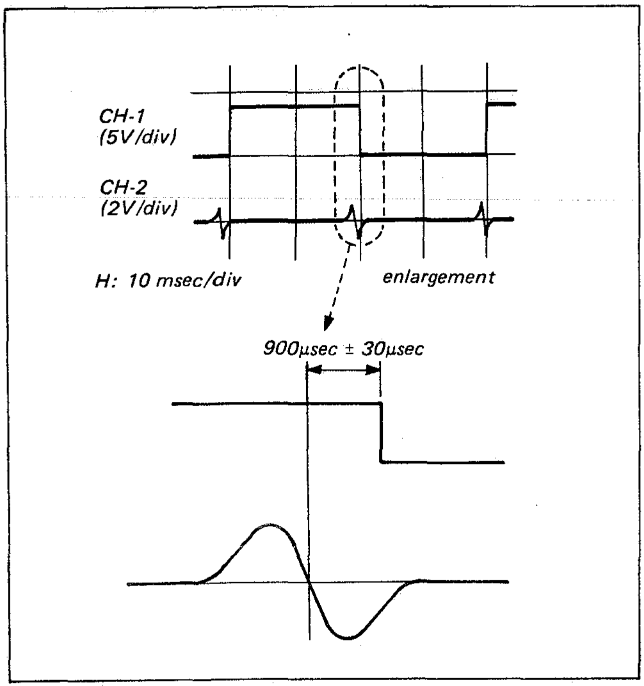

CH-1
(5V/div)
CH-2
(2V/div)
H: 10 msec/div
enlargement
900µsec ± 30µsec

Fig. 5-9. RF switching position adjustment (2)

3) PICTURE SEARCH, Drum Free Speed Adjustment (SS-16 Board)
Mode: PICTURE SEARCH (FWD)
Signal: Alignment tape colour bar or monoscope
Frequency counter: Pin ④ of CN312 (TP404)

[Adjustment method]

Adjust to 64 µsec ± 0.3 µsec with RV310. (See Fig. 5-10.)

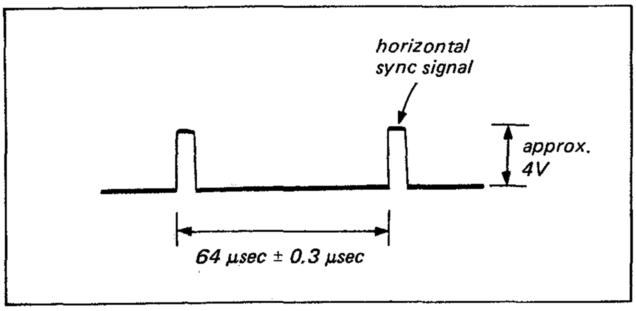

horizontal
sync signal
approx.
4V
64 µsec ± 0.3 µsec

Fig. 5-10. PICTURE SEARCH, drum free speed adjustment

5-3-2. Capstan Servo System Alignment

1) Capstan DC Bias Adjustment (SS-16 Board)
Mode: playback
Signal: Alignment tape colour bar or monoscope
Oscilloscope: TP407 (Pin ⑳ of IC301)

[Adjustment method]

Adjust the duty (ratio for A and B) to 50% ± 5% with the RV307.

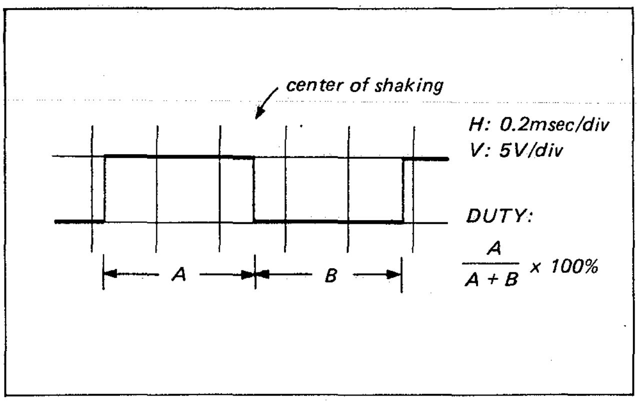

center of shaking
H: 0.2msec/div
V: 5V/div
DUTY:
A/(A + B) x 100%
A
B

Fig. 5-11. Capstan DC bias adjustment

2) PICTURE SEARCH, Capstan DC Bias Adjustment (SS-16 Board)
Mode: PICTURE SEARCH (FWD)
Signal: Alignment tape colour bar or monoscope

[Adjustment method]

i) Set up the picture search (forward) mode and adjust with RV308 so that the progression of noise bars becomes as slow as possible. (See Fig. 5-12.)
ii) Set up the picture search (reverse) mode and check that noise bars do not progress very quickly.

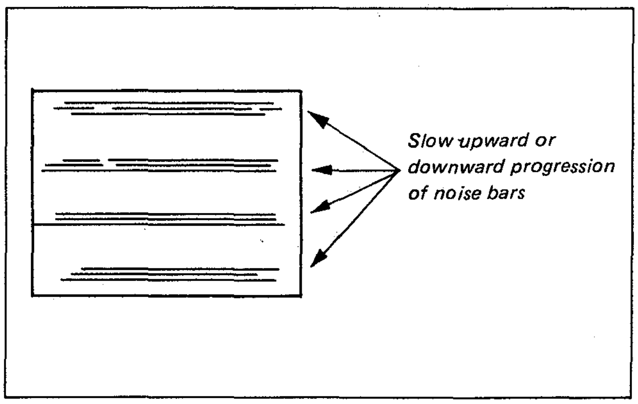

Slow upward or
downward progression
of noise bars

Fig. 5-12. PICTURE SEARCH, capstan DC bias adjustment

3) Tracking Center Adjustment (SS-16 Board)

Mode: Playback
Signal: Alignment tape colour bar, or monoscope
Oscilloscope: CH-1 TP405 (Pin ⑬ of IC301)
CH-2 TP406 (Pin ⑮ of IC301)

[Adjustment method]

i) Set the TRACKING knob to the center click position.
ii) Adjust to 7.05 msec ± 0.05 msec with RV304. (See Fig. 5-13.)

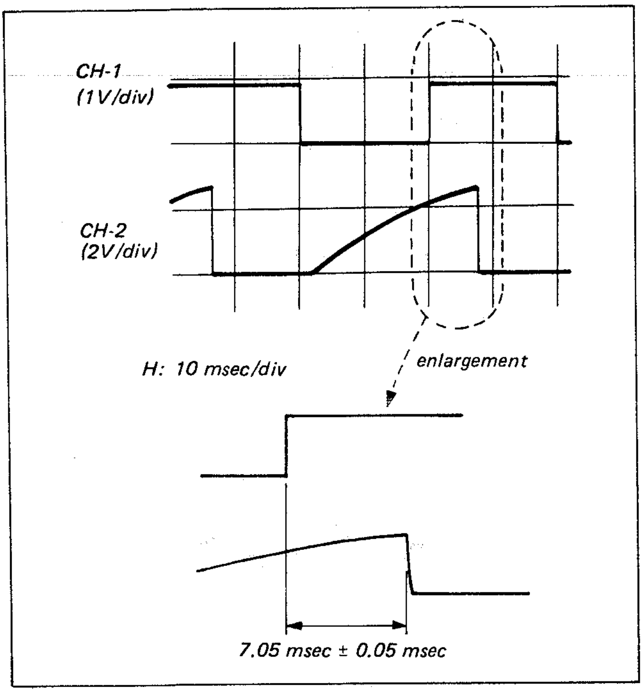


Fig. 5-13. Tracking center adjustment

5-4. PAL VIDEO SYSTEM ALIGNMENT

As a rule, first the playback system is aligned with an alignment tape to check that it operates normally, then the recording system is aligned.
The alignment sequence is shown below. The Y signal and chroma signal systems are aligned for both playback and recording systems.
Colour video signal supplied by the PAL colour bar generator is used as video input signal for video system alignment in the record mode. Check that the sync and colour burst signals conform to the specifications designated in "Set-up for Alignment" in Fig. 5-1.

[Playback System Alignment]

1. Playback frequency characteristic adjustment
2. Expand adjustment
3. Y-comb adjustment
4. Dropout compensator adjustment
5. Playback video level adjustment
6. Carrier balance adjustment
7. Chroma comb filter adjustment
8. Jog exchange chroma level adjustment
9. Shift adjustment

[Record System Alignment]

1. Sync and peak AGC adjustment
2. Carrier set adjustment
3. Deviation adjustment
4. Compress adjustment
5. 1/2 f_H shift adjustment
6. Dark clip and white clip adjustment
7. Y record current adjustment
8. 4.43 MHz REF adjustment
9. Pilot burst flag adjustment
10. ACC adjustment
11. AFC adjustment
12. AFC offset adjustment
13. Pilot burst signal level adjustment
14. Cleaning flag adjustment
15. Chroma record current adjustment

5-4-1. Playback System Alignment

1) Playback Frequency Characteristic Adjustment (RY-1 Board)
   - Adjust both the A and B channels.
   - The B channel indicated by ( ).

   Mode: Playback
   Signal: Alignment tape RF sweep
   Oscilloscope: TP1 (Pin ⑤ of CN2)
   External trigger: TP2 (Pin ④ of CN2)

[Adjustment method]

i) Turn tracking knob to maximum output.
ii) Adjust RV2 to make the 2 MHz amplitude of A and B channels equal. (See Fig. 5-14.)
iii) Set the trigger slope to −(+).
iv) Adjust the 5.2 MHz amplitude to 55 — 75% of the 2 MHz amplitude with RV3 (RV4).

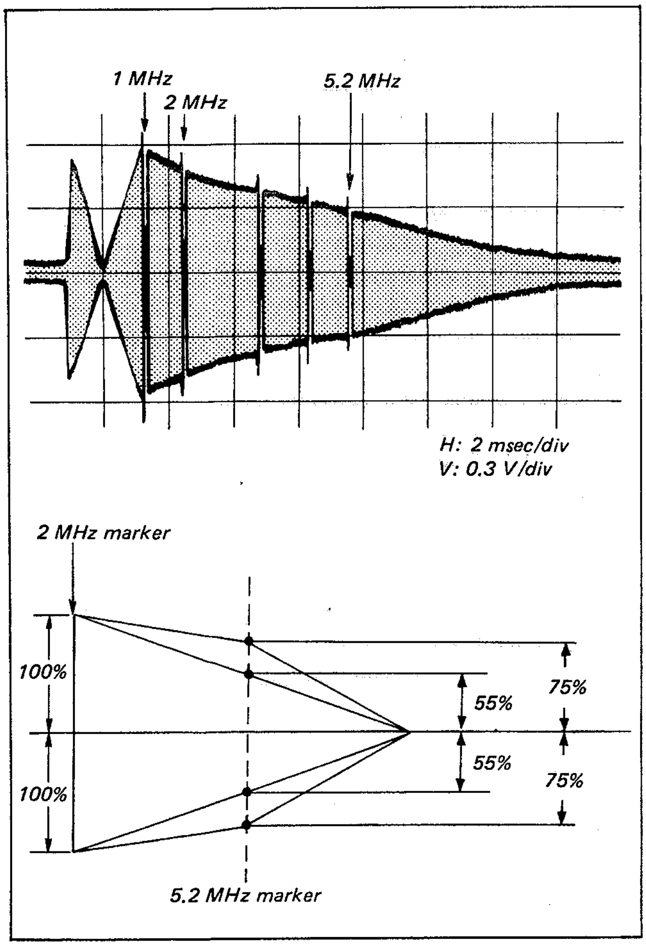


Fig. 5-14. Playback amplifier frequency characteristic adjustment

2) Expand Adjustment (RY-1 Board)
   Mode: Playback
   Signal: Colour bar
   Digital voltmeter: See Fig. 5-15.

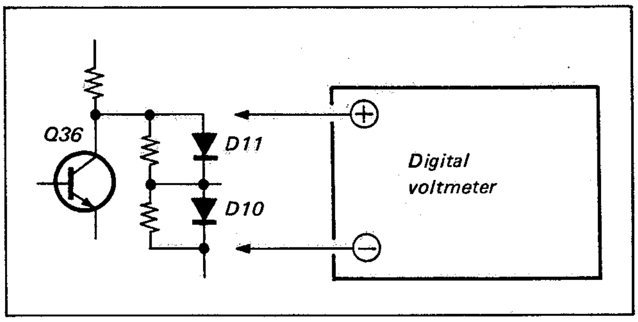


Fig. 5-15.

[Adjustment method]

i) Adjust to 0.43 ± 0.01 Vdc with RV13.

3) Y-Comb Adjustment (RY-1 Board)
   Mode: Playback
   Signal: Colour bar
   Oscilloscope: Pin ⑮ of IC4

[Adjustment method]

i) Adjust RV12 for minimum output. (See Fig. 5-16.)

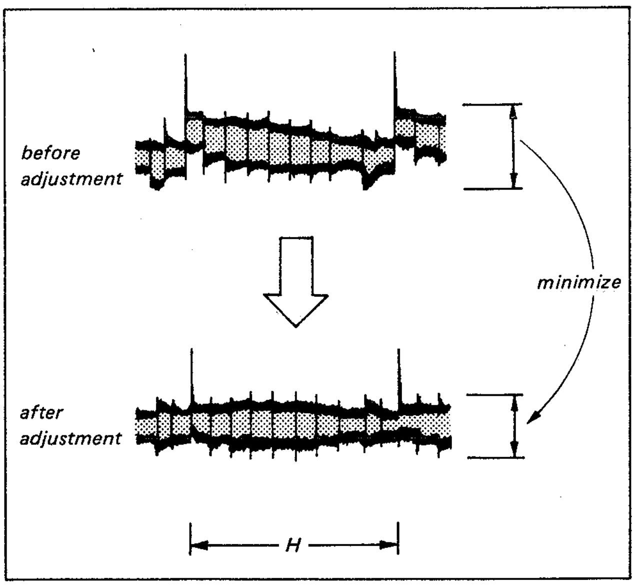


Fig. 5-16. Y-comb adjustment

4) Dropout Compensator Threshold Adjustment (RY-1 Board)
   Mode: Playback
   Signal: A recorded tape with dropouts

[Adjustment method]

i) Turn RV11 fully clockwise (↻) as seen from the pattern side. In this state, dropouts appear on the monitor screen.
ii) Slowly turn RV11 counterclockwise (↺) and set to make the dropouts disappear.
iii) Rewind the tape and verify that the dropouts described in (i) above have disappeared.

5) Playback Video Level Adjustment (RY-1 Board, YC-25 Board)
Mode: Playback
Signal: Alignment tape colour bar
Oscilloscope: VIDEO OUT (75Ω terminated) on YC-25 Board

[Adjusment method]

i) Adjust to 1.0V ± 0.05 Vp-p with RV14 on RY-1 Board.

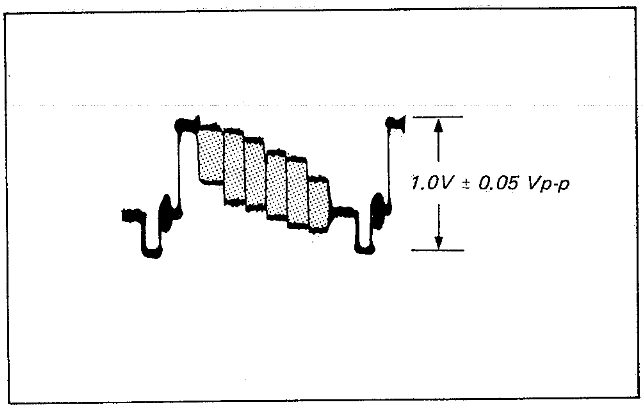


Fig. 5-17. Playback video level adjustment

6) Carrier Balance Adjustment (YC-25 Board)
Mode: Playback
Signal: Alignment tape colour bar
Adjust while observing the monitor TV screen.

[Adjustment method]

i) Minimize beats with RV004.

7) Chroma Comb Filter Adjustment (YC-25 Board)
Mode: Playback
Signal: Alignment tape colour bar
Adjust while observing the monitor TV screen.

[Adjustment method]

i) Minimize beats with RV003 and LV002.

8) JOG Exchange Chroma level Adjustment (YC-25 Board)
Mode: PB • PAUSE (STILL)
Signal: colour bar
Oscilloscope: Pin ⑧ of IC009

[Adjustment method]

i) Adjust RV013 so that the fluctuation of level is minimum. (See Fig. 5-18.)

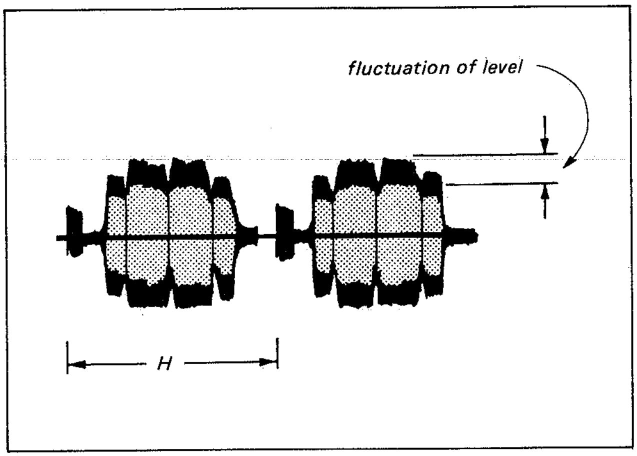
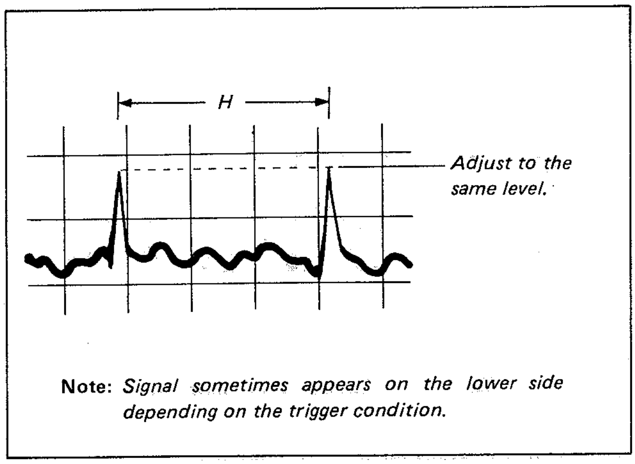


Fig. 5-18. JOG EXCH. C. level adjustment

9) Shift Adjustment (YC-25 Board)
Mode: Playback
Signal: Alignment tape colour bar
Oscilloscope: Base of Q034

[Adjustment method]

i) Align the signal level (per 1H) with RV008.



Note: *Signal sometimes appears on the lower side depending on the trigger condition.*

Fig. 5-19. Shift adjustment

5-4-2. Record System Alignment

1) Sync and Peak AGC Adjustment (YC-25 Board)
Mode: E-E
Oscilloscope: VIDEO OUT (75Ω terminated)
Signal: B/W

[Adjustment method]
i) Turn RV10 fully counterclockwise (↺) as seen from the pattern side. (Peak AGC off)
ii) Adjust to 1 Vp-p with RV11.
iii) Turn RV10 clockwise (↻) and set it so that the output level just starts to lower.

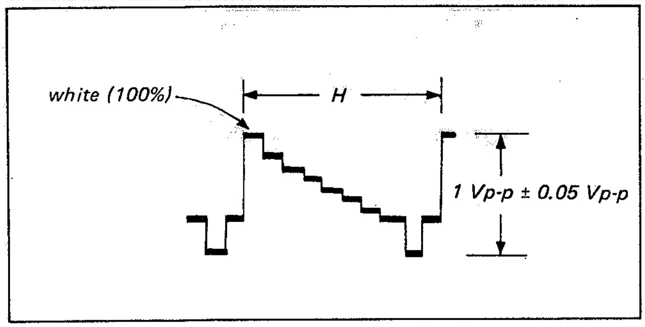


Fig. 5-20. Sync and peak AGC adjustment

2) Carrier Set Adjustment (RY-1 Board)
Mode: E-E
Signal: None
Frequency counter: Pin ④ of IC3

[Adjustment method]
1) Adjust to 3.8 MHz ± 0.04 MHz with RV8.

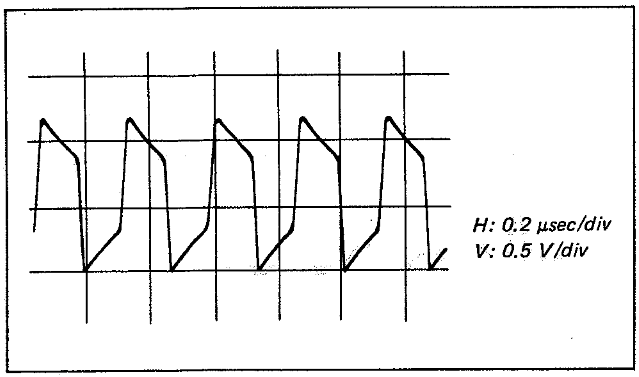


Fig. 5-21. Carrier set adjustment

3) Deviation Adjustment (YC-25 Board)
- The playback system adjustment and the carrier set adjustment in Paragraph 2) above must be completed before making this adjustment.
Mode: Self-recording and playback
Signal: Colour bar
Oscilloscope: Pin ④ of CN001, VIDEO OUT (75Ω terminated)

[Adjustment method]
i) Supply the colour bar signal and set up E-E mode.
ii) Connect the oscilloscope to Pin ④ of CN001.
iii) Adjust the Y signal level to 1 Vp-p with RV012.
iv) Set up RECORD mode.
v) Playback the recorded section of the tape.
vi) Connect the oscilloscope to VIDEO OUT.
vii) Check that the video signal level is 1.0 Vp-p ± 0.05 Vp-p, if the level is outside of this range, repeat Steps iv) through vi) above adjusting with RV012 until the standard value is obtained.

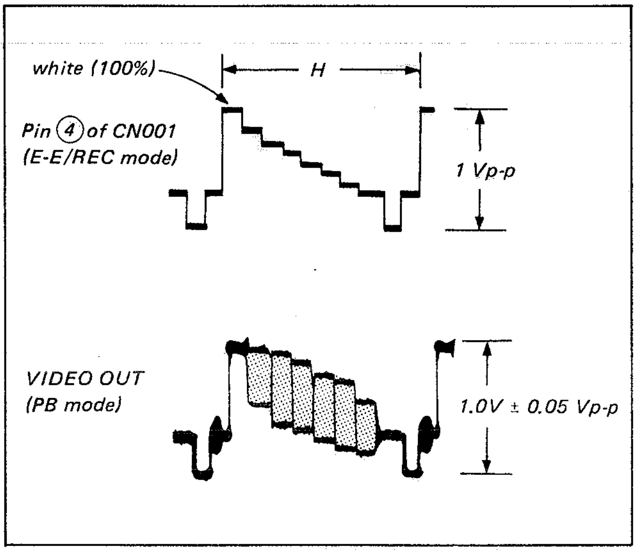


Fig. 5-22. Deviation adjustment

4) Compress Adjustment (RY-1 Board)
Mode: E-E
Signal: None
Digital voltmeter: See Fig. 5-23.

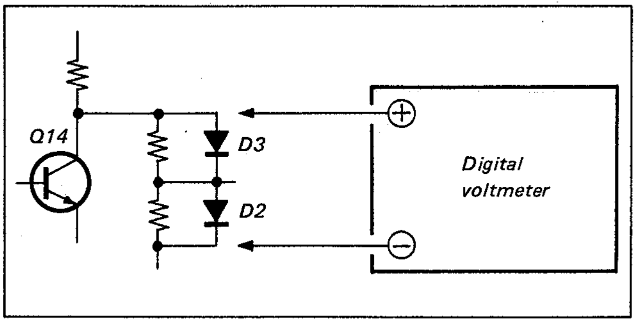


Fig. 5-23.

[Adjustment method]
i) Adjust to 0.3V ± 0.01 Vdc with RV7.

5) 1/2 f_H Shift Adjustment (RY-1 Board)
Mode: Record
Signal: None
Spectrum analyzer: Pin ④ of IC3

[Adjustment method]

i) Adjust RV6 so that the fluctuation of frequency is 7.8 kHz ± 1.5 kHz.

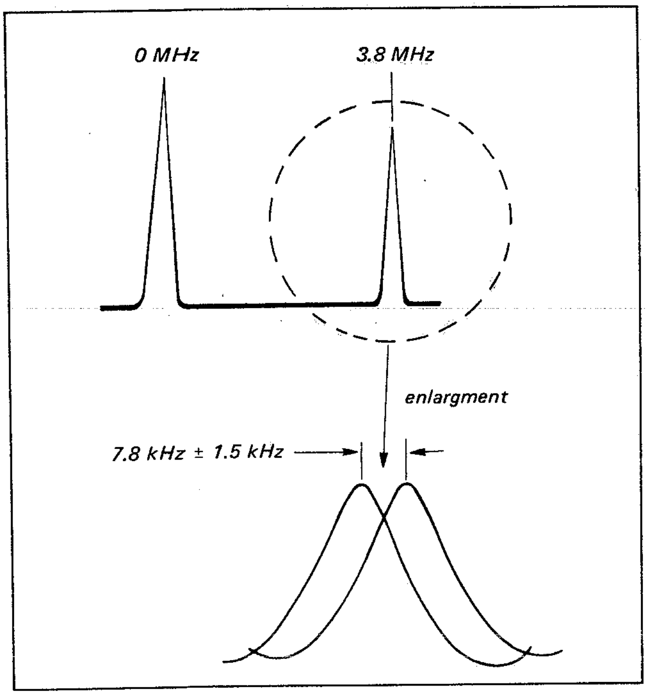

0 MHz
3.8 MHz
enlargment
7.8 kHz ± 1.5 kHz

Fig. 5-24. 1/2 f_H shift adjustment

6) Dark Clip and White Clip adjustment (RY-1 Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Emitter of Q17

[Adjustment method]

i) Adjust RV10 so that the signal tip (dark peak) is 70% ± 10%. (See Fig. 5-25.)

ii) Adjust RV9 so that the signal tip (white peak) is 220% ± 10%.

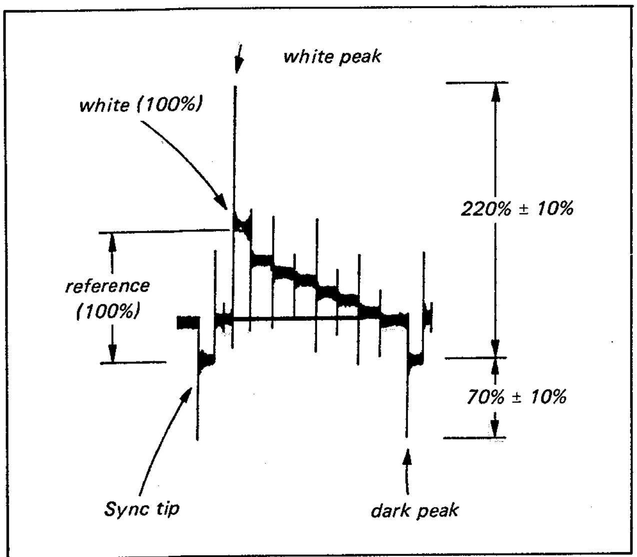

white peak
white (100%)
220% ± 10%
reference
(100%)
70% ± 10%
Sync tip
dark peak

Fig. 5-25. Dark clip and white clip adjustment

7) Y Record Current Adjustment (RY-1 Board)
Mode: Record
Signal: None
Oscilloscope: Pin ② of CN3 (TP4)

[Adjustment method]

i) Adjust to 380 mV ± 10 mVp-p with RV1. (See Fig. 5-26.)

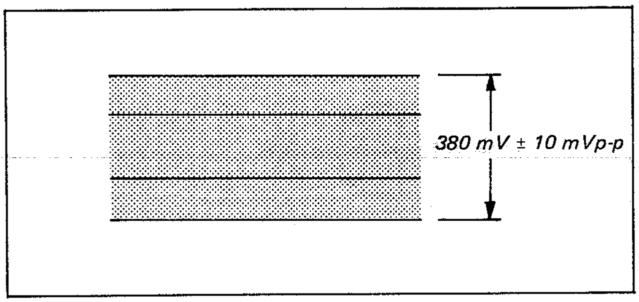

380 mV ± 10 mVp-p

Fig. 5-26. Y record current adjustment

8) 4.43 MHz REF. adjustment (YC-25 Board)
Mode: E-E
Signal: Colour bar
Frequency counter: Pin ⑦ of CN008

[Adjustment method]

i) Adjust to 4.433619 MHz ± 5 Hz with CV001.

9) Pilot Burst Flag Adjustment (YC-25 Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑩ of IC12

[Adjustment method]

i) Adjust to 2.2 μsec ± 0.1 μsec with RV009. (See Fig. 5-27.)

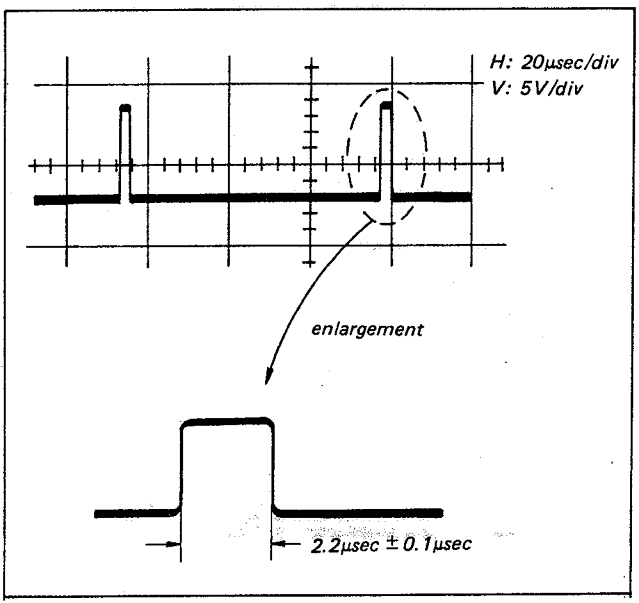

H: 20μsec/div
V: 5V/div
enlargement
2.2μsec ± 0.1μsec

Fig. 5-27. Pilot burst flag adjustment

10) ACC Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ㉔ of IC001

[Adjustment method]

i) Adjust to 0.68V ± 0.05 Vp-p with RV001.(See Fig. 5-28.)

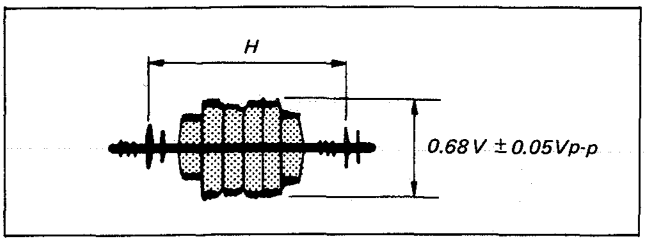

H
0.68 V ±0.05Vp-p

Fig. 5-28. ACC adjustment

11) AFC Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑯ of IC003

[Adjustment method]

i) Adjust to 1.7 Vdc ± 0.1 Vdc with RV006. (See Fig. 5-29.)

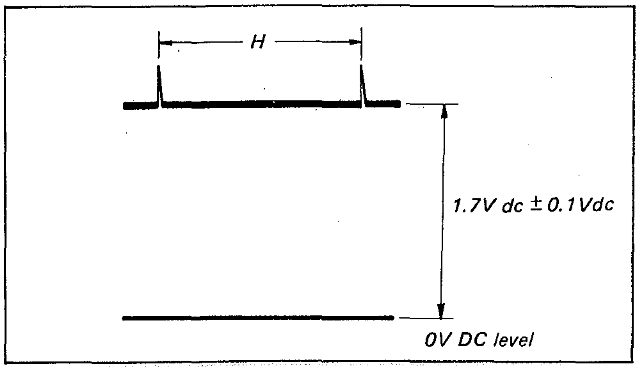

H
1.7V dc ±0.1Vdc
0V DC level

Fig. 5-29. AFC adjustment

12) AFC Offset Adjustment (YC-25 Board)

Mode: Record
Signal: Colour bar
Oscilloscope: Pin ⑯ of IC003

[Adjustment method]

i) Adjust RV005 so that the fluctuation of DC level is minimum. (See Fig. 5-30.)

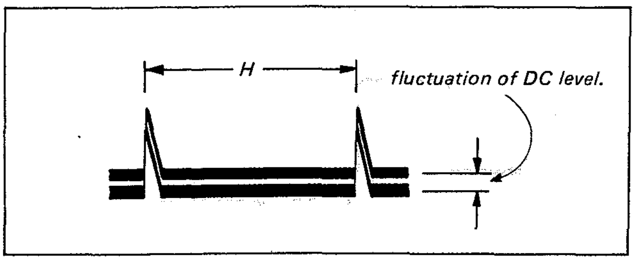

H
fluctuation of DC level.

Fig. 5-30. AFC offest adjustment

13) Pilot Burst Signal Level Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑧ of IC002

[Adjustment method]

i) Align the pilot burst signal with the chroma signal level using RV002.

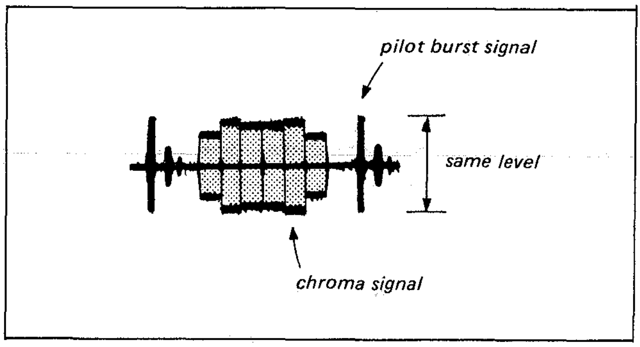

pilot burst signal
same level
chroma signal

Fig. 5-31. Pilot burst signal level adjustment

14) Cleaning Flag Adjustment (YC-25 Board)

Mode: E-E
Signal: Colour bar
Oscilloscope: CH1 Pin ⑥ of IC12
CH2 Pin ⑨ of IC12

[Adjustment method]

i) Adjust to 1.0 μsec ± 0.1 μsec with RV006. (See Fig. 5-32.)

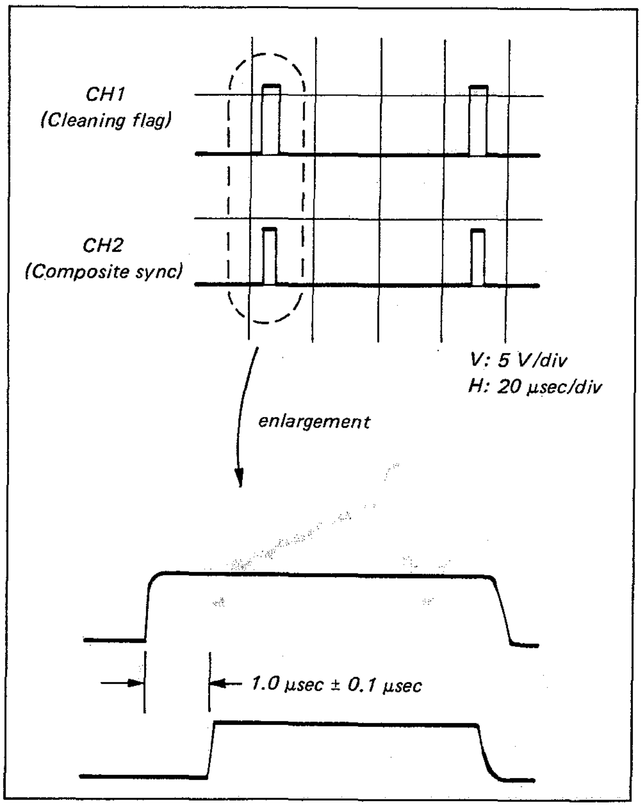

CH1
(Cleaning flag)
CH2
(Composite sync)
V: 5 V/div
H: 20 μsec/div
enlargement
1.0 μsec ± 0.1 μsec

Fig. 5-32. Cleaning flag adjustment

15) Chroma Record Current Adjustment (RY-1 Board)
Mode: Record
Signal: Colour bar
Oscilloscope: Pin ③ of CN3 (TP5)

[Adjustment method]

i) Adjust to 250 mV ± 10 mVp-p with RV5. (See Fig. 5-33.)

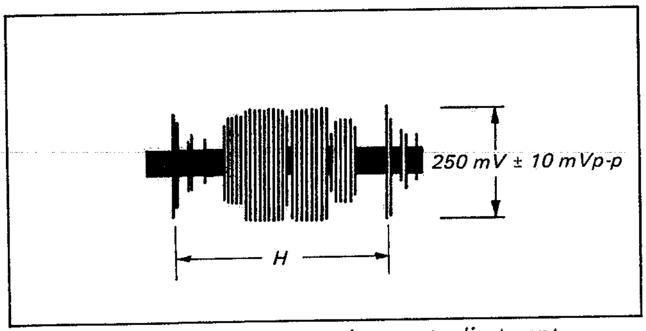


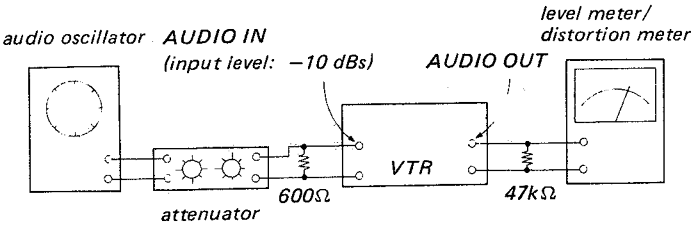
Fig. 5-33. Chroma record current adjustment

5-5. AUDIO SYSTEM ADJUSTMENT (AM-3 Board)

Use a Dynamicron tape for adjustments.

[Connection of Related Equipment]

Note: Set the INPUT SELECT switch to LINE.
Set the TONE switch to HIGH.



[Adjustment method]

1. ACE head adjustment... See "Mechanical Adjustment"
2. Playback frequency characteristic adjustment
3. Playback output level adjustment
4. Bias oscillator check
5. Record bias adjustment
6. Record current adjustment
7. Overall frequency characteristic check
8. AGC output check
9. Overall S/N check
10. Overall distortion check

1. ACE Head Adjustment

Refer to "Mechanical Adjustment"

2. Playback Frequency Characteristic Adjustment

(1) Play back 333 Hz and 5 kHz from the alignment tape and adjust so that the level difference between 333 Hz and 5 kHz is within 0 dB ± 1 dB with RV503.

3. Playback Output Level Adjustment

(1) Play back 333 Hz from the alignment tape and adjust so that the output level is −30 dBs ± 0.5 dB with RV502.

4. Bias Oscillator Check

(1) Set the input signal level to zero and set up the RECORD mode.
(2) Connect a frequency counter to Pin ② of CN504. The reading should be 65 kHz ± 6.5 kHz. (See Fig. 5-34.)

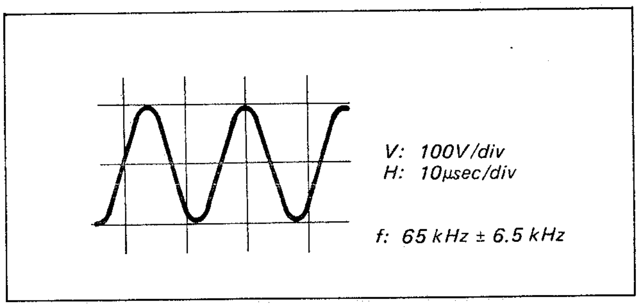


Fig. 5-34. Bias oscillator check

5. Record Bias Adjustment

Check that "Playback frequency characteristic adjustment" has been made.

(1) Connect TP506 and TP505 (GND) with a jumper wire so as to turn off the AGC operation.
(2) Supply a 333 Hz signal.
(3) Set up the E-E mode and adjust the oscillator output level so that the level meter reading is −30 dBs.
(4) Record signals.
(5) Supply a frequency of 7 kHz and perform Steps (3) and (4) above.
(6) Play back the recorded section of the tape and check that the output level at 7 kHz is ±1 dB relative to the output level at 333 Hz. If the level is outside this range, repeat Steps (2) through (5) adjusting with CT501 until the standard is met.
(7) Remove the jumper wire after making the adjustment.

6. Record Current Adjustment

(1) Supply a 333 Hz signal at −10 dBs.
(2) Record signals.
(3) Play back the recorded section of the tape and check that the output level is −9 dBs ± 1 dB. If the level is outside this range, repeat Steps (1) through (2) above adjusting with RV501 until the standard value is obtained.

7. Overall Frequency Characteristic Check

(1) Connect TP506 and TP505 (GND) with a jumper wire so as to turn off the AGC operation.

(2) Connect a 333 Hz signal.

(3) Set up the E-E mode and adjust the oscillator output level so that the level meter reading is −30 dBs.

(4) Record signals.

(5) Change the frequency to 50 Hz, 100 Hz, 7 kHz and 10 kHz and repeat Steps (3) and (4).

(6) Play back the recorded section of the tape and verify that the level is within the specification. (See Fig. 5-35.)

Standard values: With reference to the 333 Hz playback output level.

$$50\text{ Hz } {}^{+2.5}_{-6}\text{ dB}$$

$$100\text{ Hz } {}^{+2.5}_{-3}\text{ dB}$$

$$7\text{ kHz } {}^{+2.5}_{-2.5}\text{ dB}$$

$$10\text{ kHz } {}^{+2.5}_{-10}\text{ dB}$$

(7) If the specified values cannot be attained, perform 2 again. "Playback Frequency Characteristic Adjustment" and "Record Bias Adjustment".

(8) Remove the jumper wire after making the adjustment.

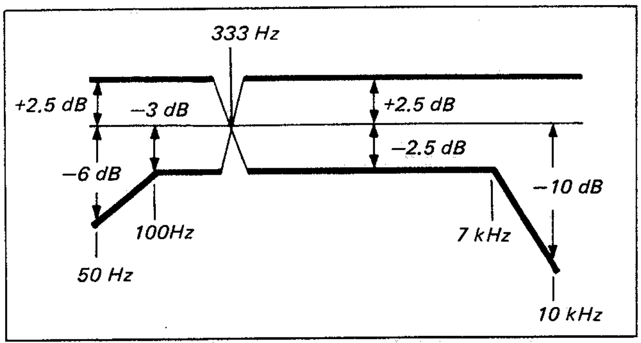


Fig. 5-35. Overall frequency characteristic

8. AGC Output Check

(1) Connect a 333 Hz signal at −10 dBs.

(2) Set up the E-E mode.

(3) Check that the output level is $-10\text{ dBs}{}^{+2}_{-3}$ dB.

9. Overall S/N Check

(1) Supply a 333 Hz signal at −10 dBs.

(2) Record signals.

(3) Set the input signal level to zero and record signals.

(4) Play back the recorded section of the tape and check that the output level difference is greater than 38 dB.

10. Overall Distortion Check

(1) Supply a 333 Hz signal at −10 dBs.

(2) Record signals.

(3) Play back the recorded section of the tape and verify that the distortion is below 4%.

5-6. TUNER SYSTEM ADJUSTMENT (TU-39 Board)

1) Tuner AGC Adjustment

(1) Set the DX/LOCAL switch on the rear panel to DX.

(2) Input RF signals (UHF channel,61 dB μ/75Ω open) from a colour bar generator, etc.

(3) Connect a digital voltmeter to TP001 (Pin ④ of IC001).

(4) Adjust RV001 to 7.2V ± 0.1V dc.

2) AFT Adjustment

(1) Set RV002 to the mechanical center.

(2) Input RF signals, and adjust PRESET VR finely for the best picture quality, while watching the monitor screen.

(3) Push the AFT switch to turn on the AFT function, and make the following adjustments.

(4) Connect a digital voltmeter to pin ⑤ of IC001.

(5) Adjust T005 to 6V dc.

(6) Connect a digital voltmeter across pins ⑤ and ⑥ of IC001.

(7) Adjust RV002 to 0V ± 0.25V dc.

5-7. TIMER SYSTEM ADJUSTMENT (TM-37 Board)

1) Clock Adjustment

(1) Connect a time interval counter to TP001.

(2) Adjust to 15624.85 μsec ± 0.05 μsec with TC001.

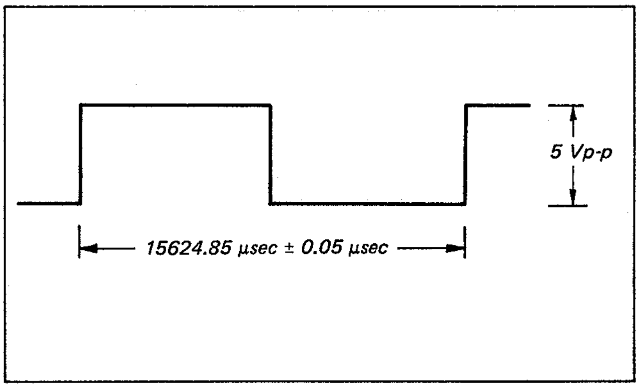


Fig. 5-36. Clock adjustment

5-8. SECAM VIDEO SYSTEM ALIGNMENT

- Make this adjustment after aligning the PAL video system.
- For this adjustment, use the equipment listed below in conjunction with an alignment tape and SECAM colour bar signals.

[Equipment Required]

(1) SECAM Colour Monitor TV
(2) Oscilloscope, Dual-trace, Bandwidth... more than 10 MHz with delay mode
(3) SECAM Colour-Bar Generator
(4) Alignment Tape, Type: KR5-1J, Code No. 8-969-996-03

[Setup for Alignment]

In this alignment, video signals obtained from the pattern generator will be used as alignment signals. Therefore, the video output signals should be within the specifications. Verify video signals by connecting an oscilloscope to VIDEO OUT connector (75Ω terminated). Check that the video signals are flat when the amplitude of the horizontal sync signal is about 0.3 Vp-p, the amplitude of the video portion is about 0.7 Vp-p, and the amplitude of the burst signal is about 0.3 Vp-p.
The video signal (colour-bar signal) used in this alignment is shown in Fig. 5-37.

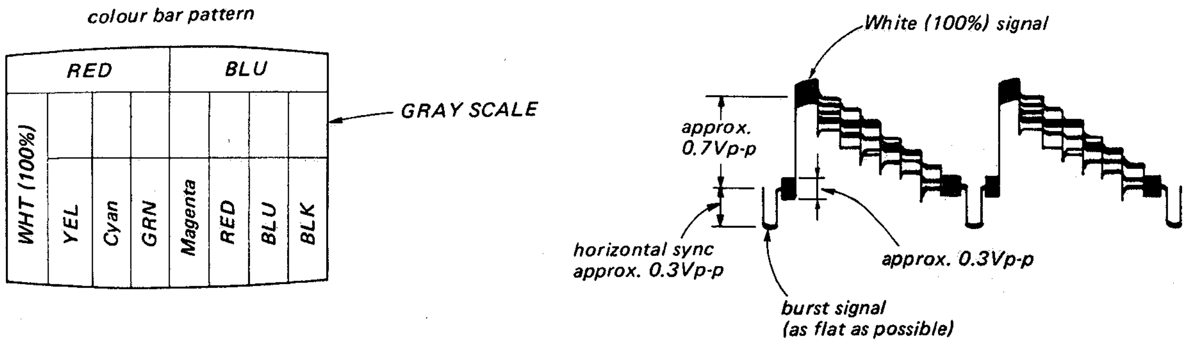
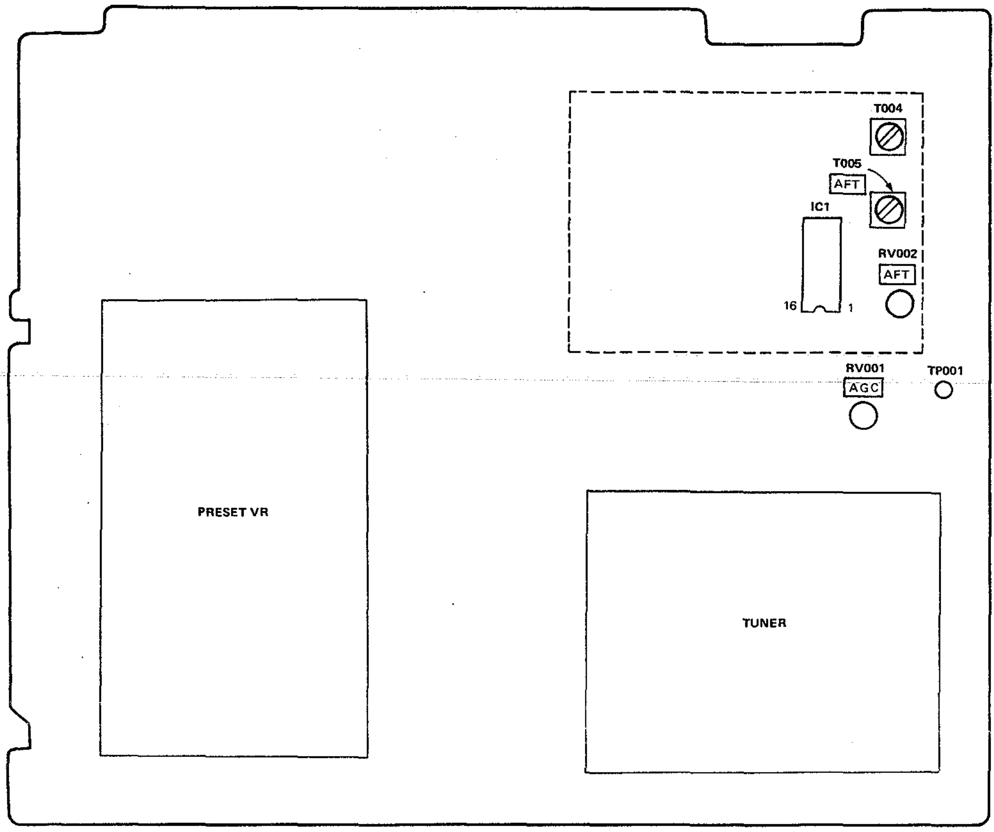

colour bar pattern
RED
BLU
GRAY SCALE
WHT (100%)
YEL
Cyan
GRN
Magenta
RED
BLU
BLK
White (100%) signal
approx. 0.7Vp-p
horizontal sync approx. 0.3Vp-p
approx. 0.3Vp-p
burst signal (as flat as possible)

Fig. 5-37. SECAM video (colour bar) signal

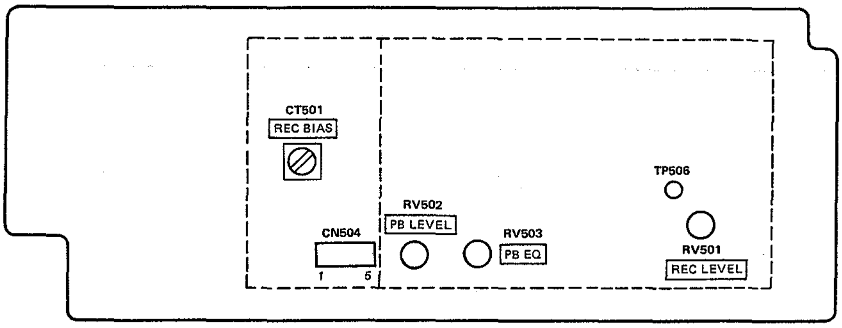
[Alignment Tape]
KR5-1J

	Video signal	Audio signal	Playing time	Use for
1.	Colour bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral, audio level adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	Video, audio frequency characteristics, audio azimuth adjustment marker: 1, 2, 3.58, 4.5, 5.2 MHz
4.	Tracking 1 MHz (CH-A) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	Tracking, Audio height adjustments CTL Position check (Check if *1 and *2 are the same position.)

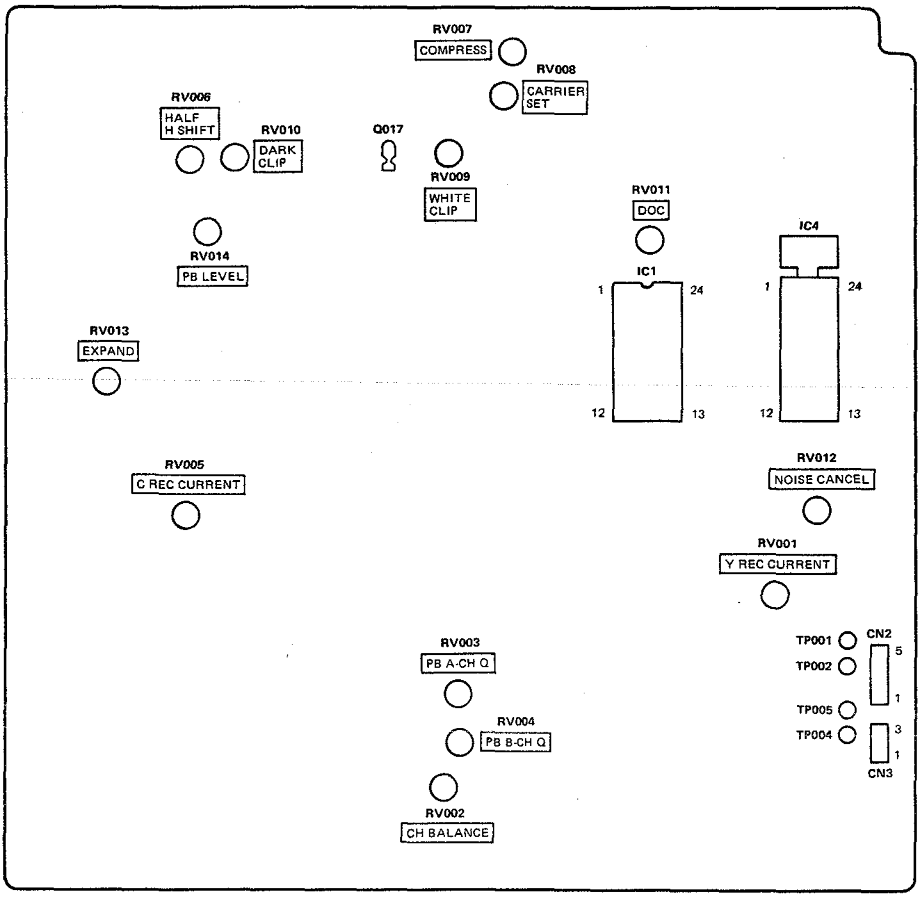
TU-39 BOARD – COMPONENT SIDE –


T004
T005
AFT
IC1
16
1
RV002
AFT
RV001
AGC
TP001
PRESET VR
TUNER

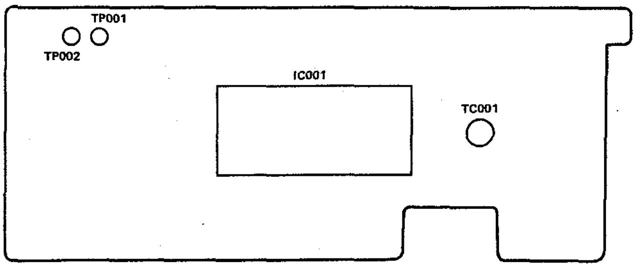
AM-3 BOARD – COMPONENT SIDE –


CT501
REC BIAS
TP506
RV502
PB LEVEL
CN504
RV503
PB EQ
RV501
REC LEVEL
1
5

RY-1 BOARD – COMPONENT SIDE –


RV007
COMPRESS
RV008
CARRIER SET
RV006
HALF H SHIFT
RV010
DARK CLIP
Q017
RV009
WHITE CLIP
RV011
DOC
IC4
RV014
PB LEVEL
IC1
1
24
1
24
RV013
EXPAND
12
13
12
13
RV005
C REC CURRENT
RV012
NOISE CANCEL
RV001
Y REC CURRENT
TP001
CN2
5
TP002
RV003
PB A-CH Q
1
TP005
RV004
PB B-CH Q
TP004
3
1
CN3
RV002
CH BALANCE

TM-37 BOARD – COMPONENT SIDE –


TP001
TP002
IC001
TC001